



Ofwat water resources working group

02 March 2017



No	Item	Time (minutes)	Lead
1	Welcome and workshop expectations	10:30 (5m)	Colin Green
2	Background to the form of control	10:35 (10m)	Peter Hetherington
3	RCV allocation for water resources	10.45 (45m)	Iain McGuffog, Peter Jordan, Rob Lee and David Young
4	Capacity measure for the control	11:30 (45m)	Peter Hetherington, Simon Harrow
5	Lunch	12.15 (45m)	All
6	The links to access pricing	13.00 (45m)	Mat Stalker
7	In-period bilateral entry adjustment	13.45 (45m)	Colin Green
8	Bringing it all together and exploring outstanding issues	14:30 (40m)	Colin Green
9	Meeting close and next steps	15:10 (5m)	Colin Green



- We are building towards the **July methodology consultation** where the form of control for water resources will be set out
- This a **new area** as this will be the **first time we set a separate control for water resources**
- While some of the elements of the form of control have been defined– some are still in development. **Throughout this pack we set out our current thinking**
- This workshop provides an opportunity for you to give us **your opinions and feedback** in advance of the consultation
- Today we want to have an **open discussion and debate.**
- There are **numerous opportunities for you to contribute**

Background to form of control

Peter Hetherington
March 2017



What is the form of control?

- In a price review, we put in place **controls that limit what companies can earn**
- The **form of control** refers to the way we choose to limit companies
- In simple terms, the limits that we set can be on **revenues or prices** and be framed as a limit on the **total amount or an average level**

Why is the form of control important?

Different types of control have different incentive properties and the choice of a particular type will depend on:

- **our objectives**
- the **incentives and behaviours** we would like to drive within companies
- the **allocation of risks** between companies and customers

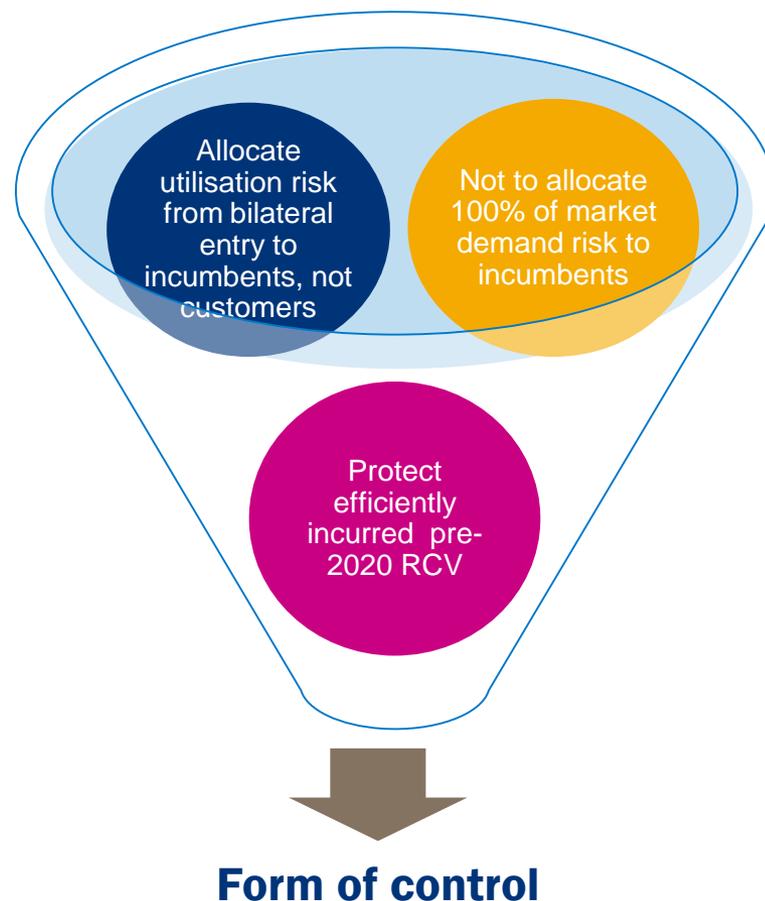
Where is the form of control set?

- This will be **the first time** we are setting a **separate water resources control**
- The **form of control** for water resources will be set in the **PR19 methodology**
- We will **consult** on this in **July**

We are introducing a separate control for water resources at PR19, this will help:



In achieving these objectives there were **three key objectives** that impacted the design of the form of control:





Option 1: Unit cost approach

Set an **average revenue control** (not total revenue) or price cap based on an assessment of the unit costs (including financing costs) of supplying raw water, without reference to the levels of past investment, RCV or expenditure. Revenue **would fall automatically as the incumbent loses market share** to bilateral market entrants

Option 2: Asset based approach

Separately identify the **specific assets attributable to post 2020 investment** (including additional capacity and maintenance/renewal of existing capacity) and introduce a policy that these assets might be **disallowed/removed from the RCV to the extent that they are under-utilised**

Option 3: Adjustment based approach

Keep a **total revenue control** but **introduce an element** to the price control framework which means that the **financial remuneration** to the incumbent for post 2020 investment depends on the **extent to which that investment is used or needed**



	1 Unit cost approach	2 Asset based approach	3 Adjustment based approach
Achieving our objectives	<p>Exposes incumbents to full market wide demand risk Does not fit well with the objective of protecting the pre-2020 RCV Protects customers from bilateral market entry</p>	<p>Does not expose incumbents to market wide demand risk through form of control Protects pre-2020 RCV Will distort company optimisation decisions in favour of newer assets over older ones</p>	<p>Decision</p> <p>Does not expose incumbents to market wide demand risk through form of control Protects the pre-2020 RCV Protects customers from bilateral market entry</p>
Addressing known problems	<p>Revenue control affected by changes in volumes, similar to revenues of a competitive firm</p>	<p>Timing issues – customers would not be properly protected Unlikely that regulatory commitment would bite</p>	<p>Revenue control would reflect changes in utilisation due to bilateral market entry through the adjustment mechanism</p>
Practicality	<p>Can be set on existing data Allows for a simpler price control structure (though radically different from the status quo)</p>	<p>Very information intensive, would require detailed information logging</p>	<p>Can be based on existing data Will require ongoing additional data for adjustments</p>



- Our approach works by **drawing a clean line between the capacity available from existing assets in a WRZ at 31 March 2020 and any subsequent capacity developed from 1 April 2020**
- Having drawn this line, we can then look at outturn demand in any subsequent year and **determine objectively** the extent to which the post-2020 incremental capacity is **used or needed due to bilateral market entry** and make the **relevant adjustments**
- Incumbents are **not exposed to market wide demand risk through the form of control**. However as set out in the [November working group](#) (see slides 41 to 72) this may be introduced in a different way for significant new investment
- Because we look at overall capacity, rather than specific assets, we **do not distort company optimisation decisions**
- With the capacity distinction at 31 March 2020, we are able to **limit the allocation of utilisation risk from bilateral market entry to protect the pre-2020 RCV**

Allocate utilisation risk from bilateral entry to incumbents, not customers ✓

Not to allocate 100% of market demand risk to incumbents ✓

Protect the pre-2020 RCV ✓



- The water resources control will be a **restriction on the total revenues** attributable to water resource activities, calculated as the sum of two elements:
 1. **a fixed element** (for example, £X million a year) consisting of
 - **allowed revenue for the incumbent water company's water resource capacity at 31 March 2020**, calculated using a building blocks approach. This will include a return on the water resources RCV at 31 March 2020
 - **allowed revenue for remuneration for totex and returns for any additional capacity required from 1 April 2020**, also calculated on a building blocks basis
 2. **a mechanistic within-period adjustment factor** that depends on the scale of bilateral market entry

Key points to note

- for company areas where no new water resources are planned the adjustment factor will be set to zero
- as the bilateral market will not be extended to companies mainly in Wales the adjustment factor will also be zero
- the capacity at 2020 is not fixed, we expect it to reduce over time
- market wide utilisation risk for new investment is not in the form of control but may be introduced a different way for significant new investment

The components required to implement our form of control

RCV allocation to water resources

This is required as we are adopting a RCV based building block approach to the control

While the RCV as a whole will sit with the appointed company there will be an explicit allocation to the water resources control

The RCV allocation will be linked to pre-2020 capacity

Capacity measure

To implement our form of control we need to quantify:

- **the level of capacity available at 31 March 2020**
- **the additional capacity provided to incumbents by the post-2020 incremental water resource investment funded through the price control**
- **the volume of annual water demand that can be accommodated by this capacity**

Understanding of the link to access pricing

The Water Act 2014 will enable third parties to supply directly to a retailer supplying non-household customers (bilateral market in England)

To facilitate such a transaction the water provider will need to arrange access to the local incumbent's network and to pay an 'access price'

There are links between access pricing and the control, this could be structural or informal

In-period bilateral entry adjustment

This will be linked to the scale of bilateral market entry

In May we proposed that it would be a in period revenue adjustment

This risk only applies to post-2020 capacity

This has links to access pricing e.g. link between adjustment and the compensation payment

This workshop is structured around these four areas

RCV allocation water resources

Iain McGuffog, Peter Jordan, Rob Lee and David Young
March 2017

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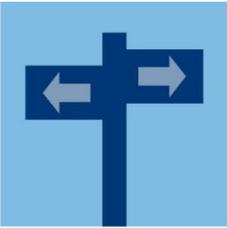
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This session covers RCV allocation for water resources



In the session today we will:

- **recap our decision on RCV allocation** in our Water 2020 May 2016 decision document
- provide a summary of the **RCV allocation technical guidance** issued in January this year
- set out **Ofwat's expectations** for RCV allocation
- set out the **timetable** for RCV allocation
- gather your **views and feedback** on key issues through **discussion groups**



In our [May 2016 decision document](#) (see section 5.8) we set out:

- an **unfocused approach** would be the most appropriate methodology
- the **problems and costs of a MEAV revaluation** and the **potential impact on wholesale tariff structures**
- given this context it would be preferable for **each company to have greater ownership and responsibility for how its historical RCV is allocated** between water resources and network plus
- **companies will develop and justify proposals for the allocation** and these will be subject to a proportionate and risk-based review by us
- these proposals will be shaped by **Ofwat guidance** with the allocations to be finalised as part of PR19
- **companies will be able to revisit the allocation in PR24** if there are compelling reasons to change e.g. to meet the RCV protection guarantee or evidence of misallocation at PR19, this is expected to be by exception

The benefits of our approach:

- it helps to avoid unnecessary impacts on wholesale tariffs and strengthens companies' ownership of their wholesale tariff structures;
- it avoids the regulatory burden of a full MEAV exercise;
- It does not place reliance on existing MEAV data that may be out-dated or otherwise unsuitable; and
- it enhances regulatory protection for the pre-2020 legacy RCV.



Key building block of the revenue control

The legacy RCV allocated to water resources will be part of the calculation of the total revenue control. This will be used as part of our building block approach to the control

Potential impact on wholesale tariffs

The allocation of the water resources pre-2020 legacy RCV could affect the balance of wholesale tariffs for different services (for example, supplies to households versus large users and potable versus non-potable supplies)

The links to WRMPs

Companies should consider their RCV allocation approach alongside their WRMPs. This will allow companies to consider the impact of their allocation on water resource markets and wholesale tariffs

The links to bulk supplies

Where bulk supply prices are related to average costs for components of water resource or network plus services, RCV allocation could have an impact on the cost associated with providing bulk supplies.

Cost transparency

To provide regulatory commitment and support binding controls, the allocation of the legacy wholesale RCV to the water resources control needs to maintain consistency between charges and cost recovery.

Level playing field

In cases where the incumbent water companies use legacy assets to offer services outside the regulatory ring fence. This could arise, for example, when providing water resources outside the core area of public supply.



- We issued our [technical guidance](#) for allocation of legacy pre-2020 RCV on 31 January
- Our guidance sets out:
 - a **range of potential approaches** that could be adopted in line with an unfocussed approach. See slide 18
 - a **range of issues** companies should consider. See slide 19
 - **our expectations** from companies. See slide 20
 - **the timetable**. See slide 21
- Recognising the potential complexity of RCV allocation we intend to **meet with companies to understand their proposed approach** in response to this guidance.
- This **will inform our expectations** for the information that we need to collect from all companies on RCV allocations.

Topics for company meetings:

- approaches being considered to allocating the pre-2020 RCV
- approach to analysing impact on wholesale tariffs
- relevance of Water Resource Management Plans to the approach
- discussion on information requirements and timetable

Potential approaches to allocating the pre-2020 legacy RCV

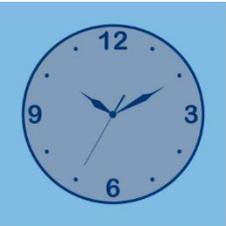
Approach to RCV allocation	Summary of considerations
Based on net MEAVs	Companies can consider a roll forward of the 2014-15 net MEAV for water resources (based on the full revaluation of all water wholesale assets carried out at PR09). The unfocussed allocation of RCV would be based on the proportion of the net MEAV for water resources assets of the net MEAV for all water wholesale assets
Based on gross MEAVs	This would potentially be a lower allocation than an unfocussed approach on a net MEAV basis as assets existing at privatisation (including long life water resource assets such as reservoirs) would have a higher relative gross MEAV and therefore be less represented in an RCV allocation on this basis than those that have been replaced more recently
Splitting pre-privatisation assets at a discount to the RCV and post privatisation assets at full value	Companies may want to consider this as a cross check to other approaches that consider historic expenditure. However, given the changes to asset records and accounting classification since privatisation this may be difficult to calculate
Historic expenditure – e.g. proportion of past expenditure, or operating costs and accounting charges for capital expenditure, incurred on water resources	Depending on the data and the life of the assets, this may provide a good cross check or alternative approach to an allocation based on estimates of net MEAVs. The period of time that was appropriate to consider may in part be driven by the basis for the accounting charges
Projected expenditure (either totex or operating costs and accounting charges for capital expenditure) – e.g. proportion of future expenditure expected on water resources	The proportion of future expenditure expected on water resources could be tested. Given the long life of water resource assets, the period of time that would need to be considered may be longer than 25 plus years of water resource management plans
Economic value	<p>The forward looking revenue stream (net of operating costs) from prices for water resources and other aspects of water supply set on a consistent long run basis. Where companies have supply demand surpluses at a point in time, the value of this water for trading may need to be considered.</p> <p>The historic and future expenditure considerations associated with the access price for third party water resource providers in the bilateral water trading market in England and compensation payments could be considered with this approach, building on the Average Incremental Cost data in company Water Resource Management Plans</p>
Averaged or hybrid approaches	In arriving at the RCV allocation, companies could consider averaging between different approaches. In doing this companies should consider the impacts on wholesale charge structures

Issues for companies to consider

Issue	Comment
The definition of water resources	Companies should base their RCV allocation for water resources on the basis of Regulatory Accounting Guidelines 4.06. Company annual performance reports and regulatory accounts for 2016-17 will be the first to reflect this and prior years will have been recorded and reported on a different basis. Companies will need to provide assurance that data used for RCV allocation has been allocated correctly, including setting out the basis for any adjustments to historical information to reflect the regulatory accounts which will be used for the control.
Impact on wholesale tariffs	The allocation of the water resources pre-2020 legacy RCV could affect the balance of wholesale tariffs for different services (for example, supplies to households versus large users and potable versus non-potable supplies). As part of their considerations we expect companies to carry out an analysis of how their proposals could affect the calculation of wholesale charges for different services and customer groups. This analysis will need to split out wholesale tariffs into water resource and network plus charges. Testing the sensitivity of the legacy RCV allocation through charging models under a range of different allocation and competition scenarios should inform this analysis. We would not expect to see significant disruption in historical tariff structures without strong supporting evidence and consideration to how to transition to any new tariff structure.
The links to WRMPs	Companies should consider their RCV allocation approach alongside their Water Resource Management Plans (WRMPs). This will allow companies to consider the impact of their legacy RCV allocation on water resource markets and wholesale tariffs. WRMPs are expected to consider the potential for water trading, as well as the cost of water resource and other options to address deficits between water supply and demand. Companies will need to consider how their calculation of water resource costs from their WRMPs are affected by their proposed RCV allocation.
The links to bulk supplies	Maintaining consistency between charges and cost recovery is a factor companies need to bear in mind when developing their RCV allocation and why we will leave ownership with companies, only intervening where there are clear risks to consumers or the development of markets. This will include cases where the incumbent water companies use appointed assets to provide bulk supplies.
The potential for reallocation at PR24	<p>In order for the RCV allocation to provide regulatory commitment and support binding controls, the allocation of the existing wholesale RCV to the water resources control needs to be stable over time. This is also important for third party providers who need certainty about the prices they need to compete against.</p> <p>However, in May we recognised that there are advantages to allowing companies to revisit the allocation of the existing wholesale RCV to water resources at the next price review if there are compelling reasons to change or evidence of misallocation at PR19.</p> <p>To be clear we would expect any changes to be the exception rather than the rule and it would require compelling evidence of a misallocation, it will not be an opportunity for companies to improve their competitive position.</p>



- Their **proposed unfocused RCV allocation to water resources** as a percentage and forecast £m of the 1 April 2020 total water RCV
- A **comparison** to the previously reported **2014-15 water resources net MEAV** as a proportion of the total water wholesale net MEAV, together with an explanation of why the proposed unfocused RCV allocation varies from this
- **Supporting calculations** of how the RCV allocation proposal has been calculated as well as **details of the alternatives considered**, together with a **narrative justifying the choice**
- **Explanation of how the issues set out in the technical guidance have been considered**, in particular any sensitivity testing on wholesale tariffs and bulk supplies (e.g. testing the sensitivity of the legacy RCV allocation through charging models under a range of different allocation and competition scenarios)
- Clarity on the **consistency of the analysis with information within company WRMPs**
- A **statement from their Board** setting out the factors and assurance information they considered in support of the proposed RCV allocation

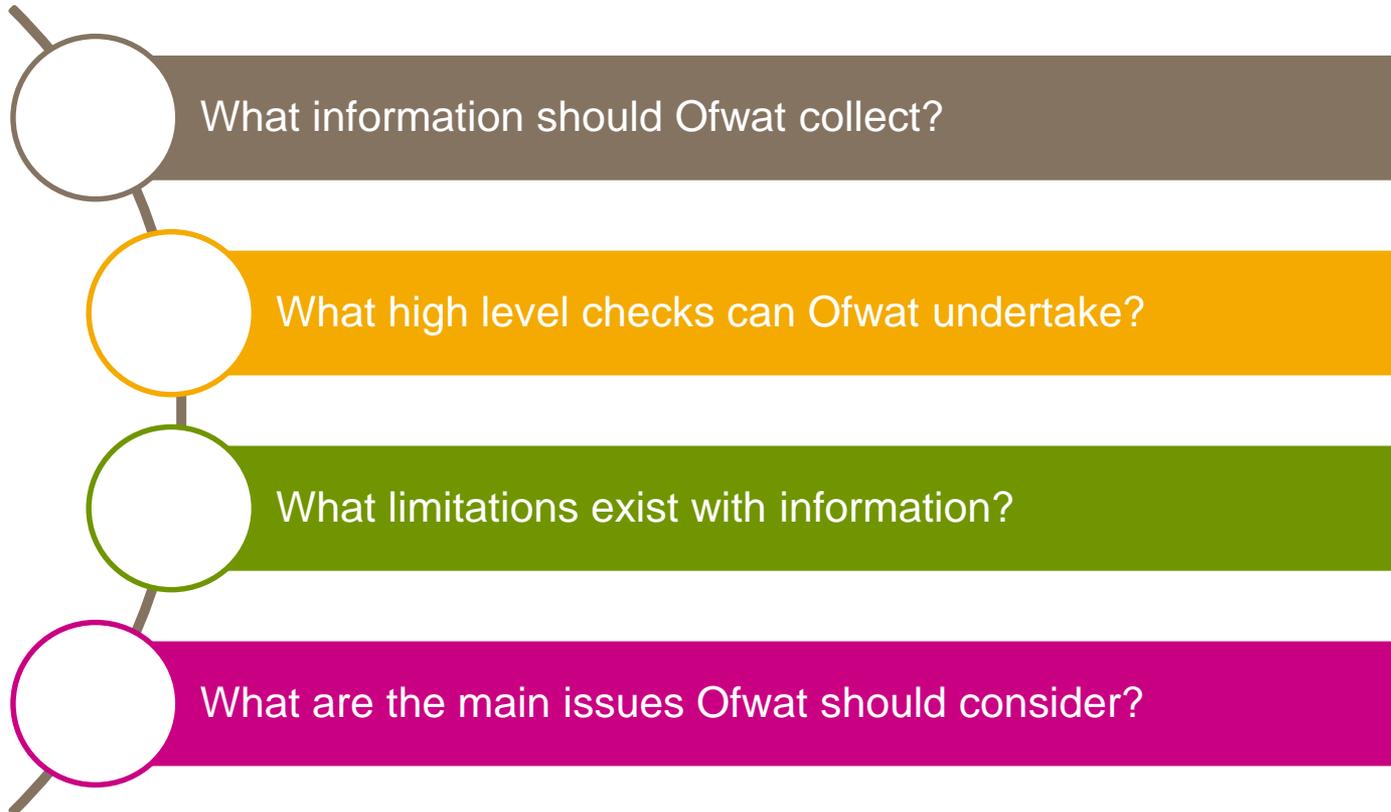


Date	Deliverable
April 2017 – May 2017	Meetings with companies to understand approach in response to this guidance
July 2017	Ofwat sets out the information we intend to collect alongside the Water 2020 methodology consultation
End of January 2018	Companies submit water resource RCV allocation information.
End of April 2018	Ofwat provide feedback on water resource RCV allocation to companies approach to inform their PR19 business plans
December 2019	Ofwat decision on RCV allocations as part of PR19 final determinations

- We have set our timetable so that we collect information on company proposals for their water resource RCV allocations after the draft Water Resource Management Plans have been developed
- This will allow companies to consider fully the relationship between current and incremental water resource costs and the relationship with other services within network plus such as water treatment



- We are currently **developing our approach to our assessment of RCV allocation at the Price Review**
- We **want to explore with you:**



- To do this we are going to split into **4 groups**, with **15 minutes for discussion** and **10 minutes for feedback**

Water resources control - capacity measure

Peter Hetherington, Simon Harrow
March 2017

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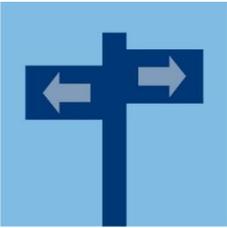
This will be linked to the scale of bilateral market entry

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This session covers the capacity measure for the control



In the session today we will cover:

- what would an **ideal capacity measure** look like?
- the problem – **the complex nature of capacity** in a water system
- understanding capacity through the **supply-demand balance calculation**
- our **potential options** in detail
- **application of the options** to a simple water resource zone
- **preferred approach** and **implications**
- example of **capacity tracking over time**
- options for **capacity re-assessment**
- **questions** and **breakout session** on re-assessment



There are various options for a water resources capacity measure. For the water resources control to work as intended an ideal measure of capacity will be:

- 1. Within the activity envelope of the separate price control.** This is set as the regulatory accounting guideline 4.06 definition of water resources. If the measure incorporated capacity from network plus which is outside the scope of our control, it could distort incentives and put at risk our commitment to protect the pre-2020 RCV for water resources
- 2. Transparent, objective and practical to calculate.** There are multiple types of different water resources and we want the measure to be consistent between companies. If it was overly complex and subjective it would be difficult to review and assure which could distort the effectiveness of the separate control
- 3. Able to capture changes in capacity over the period.** The capacity at 2020 is not fixed. The protected capacity can reduce over time and the measure also needs to capture incremental capacity during the control period
- 4. Transferable into average demand.** We will need to convert changes in demand due to bilateral market entry into capacity utilisation. We have committed in May to have an in period adjustment mechanism for bilateral market entry and to do this we need to be able to convert capacity into average demand

Recognising the importance of these criteria we used them as part of our options evaluation for the capacity measure

The problem – the complex nature of capacity in a water system

1) System Overview in RAGs



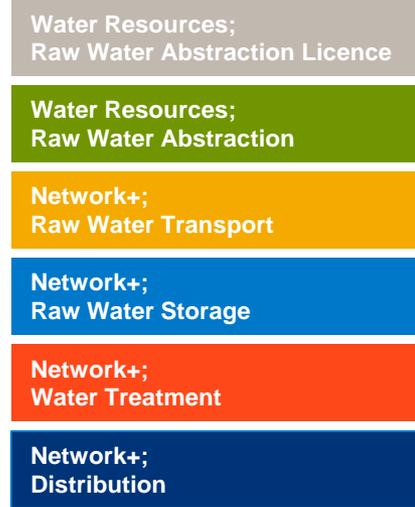
2) Example Assets

- Water resources:** Reservoirs, Boreholes, River Weirs, Pumps, Pipes
- Raw water distribution:** Pumps, Pipes
- Water treatment:** Pumps, Pipes, Tanks, Filters
- Treated water distribution:** Pumps, Pipes, Reservoirs

3) Current System Elements and Potential Capacity Measures



Price control units (as defined in RAGs)

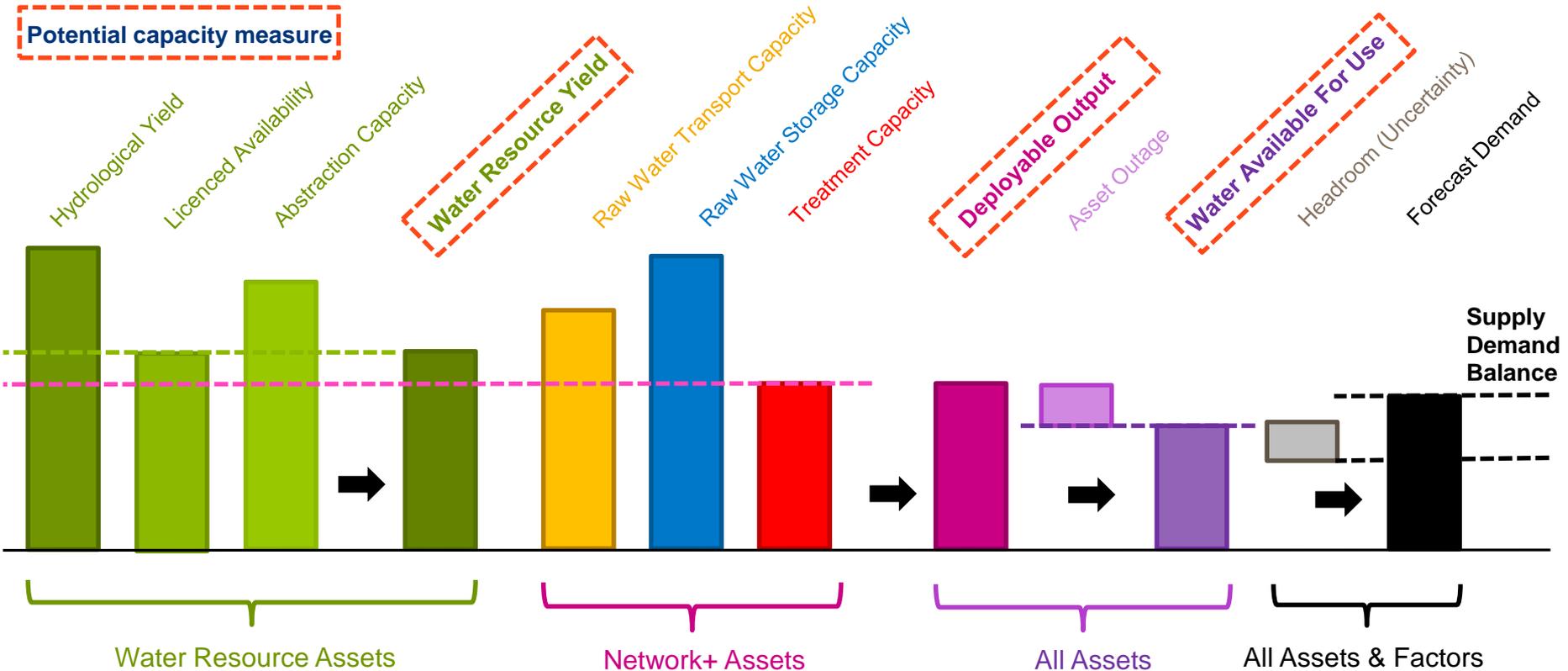


Capacity has many facets, it will be different dependent on the return period, the event it is modelled for, which part of the network/assets is being included, etc.

Understanding capacity through the supply-demand balance calculation

- However, we are not starting from scratch as elements of capacity are defined through the WRMP process, in particular through **the supply-demand balance (SDB) calculation**.
- This calculation defines the problem in terms of maintaining long term supplies. The assessment uses all the elements of supply, any reductions in that supply, and then compares this to the likely demand.
- We identified **three potential capacity measures** we can use from this calculation.

Figure: A representation of a supply-demand balance calculation (mapped to RAG price control units)





1. Water Resources Yield

- This is a sub-set component of the water company Deployable Output calculation. **It captures the average volume of water available (dependent on the critical period) from the environment and constrained by Water resources control assets.**
- The capacity is defined by Water resources assets and sources including:
 - assumed level of service (return period drought) and critical period (Dry Year Annual Average (DYAA)/ Dry Year Critical Period (DYCP))
 - hydrological (source) yield
 - licence availability
 - raw water abstraction asset capacity (e.g. abstraction pumps, pipework, etc)
- 2020 protected capacity will potentially change over time due to:
 - change in level of service (a system in a worse drought will yield less water)
 - climate change reductions
 - licence changes
 - abstraction reform
 - reassessment of yields / abstraction capacities [unlikely within AMP]

2. Deployable Output (DO)

- This is a **measure of the amount of the available water that can be deployed to customers.** This includes the Water Resources Yield elements (above) and Network+ asset constraints in the raw water transport, water treatment and distribution system.
- This is a well established metric used by water companies and a sub-set of the Water Available For Use calculation.



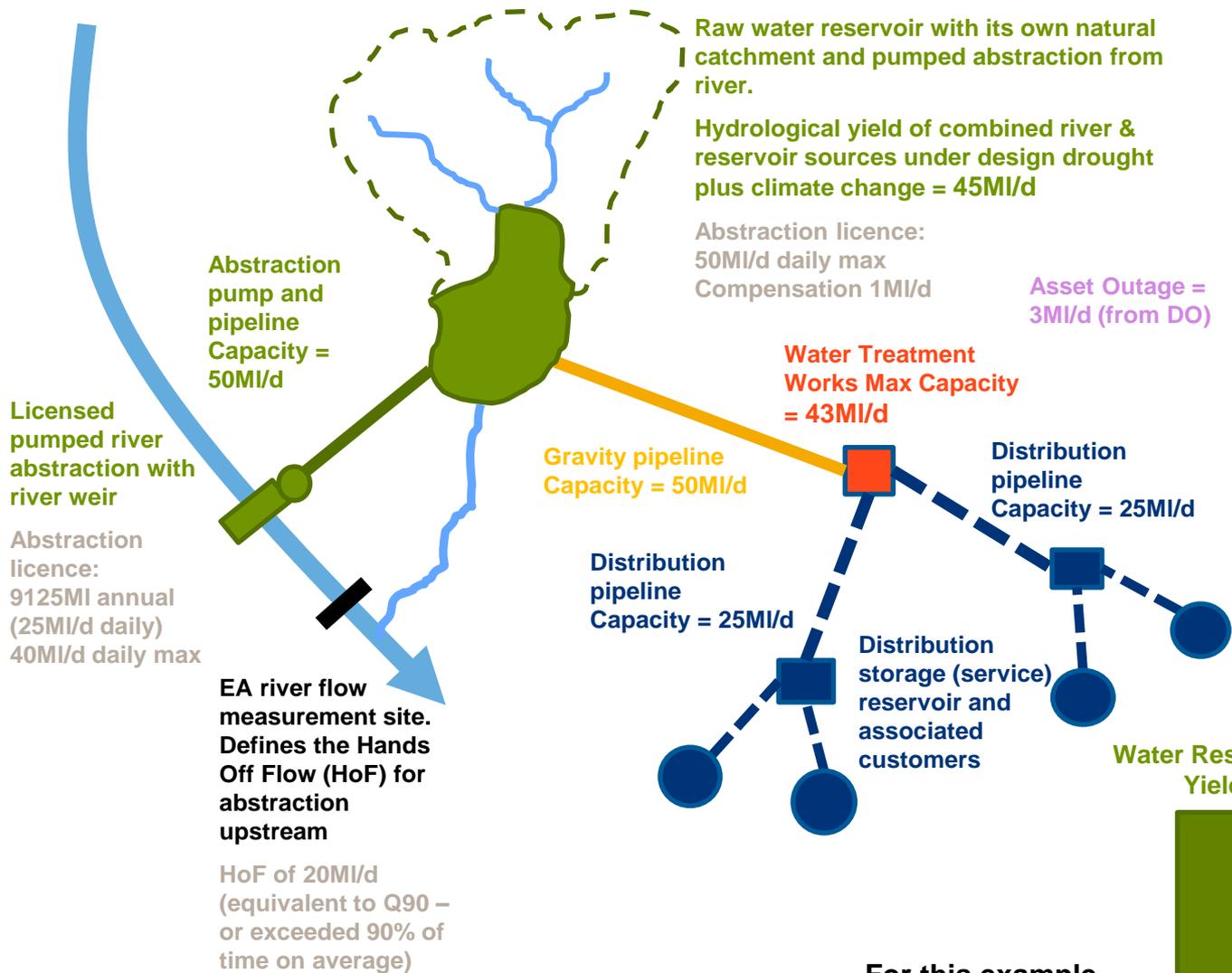
2. Deployable Output (DO) .cont.

- The capacity is defined by Water resources & Network+ assets including (all factors listed for 1., PLUS):
 - raw water storage and transport capacity
 - treatment capacity and distribution capacity
- 2020 protected capacity will change over time due to (all factors listed for 1., PLUS):
 - reassessment of raw water storage and transport capacity [unlikely within AMP]
 - reassessment of treatment capacity and distribution capacity [unlikely within AMP]

3. Water Available For Use (WAFU)

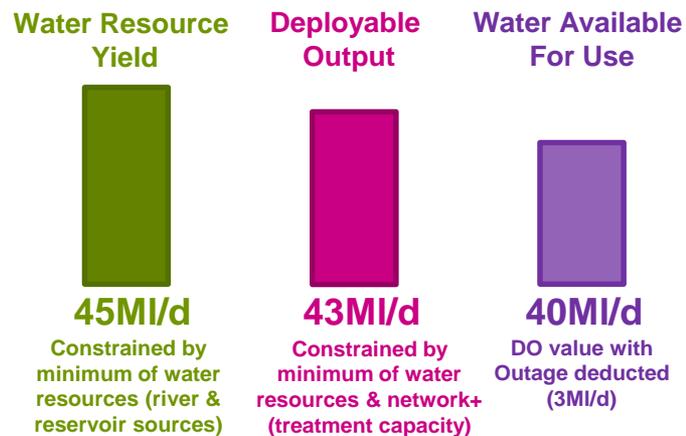
- This is the **best estimate of what is available for delivery to customers and essentially the whole supply demand balance excluding headroom (uncertainty).**
- This includes the allocation for outage to account for assets not always being available.
- This is a metric commonly used by water companies and a significant component of the supply-demand balance.
- The capacity is defined by Water resources & Network+ assets including (all factors listed in 1. and 2., PLUS):
 - asset outage
- 2020 protected capacity will change over time due to (all factors listed in 1. and 2., PLUS):
 - change in outage

Applying the measures to a simple Water Resource Zone (WRZ)



Price control units

- (as defined in RAGs)
- Water Resources; Raw Water Abstraction Licence
 - Water Resources; Raw Water Abstraction
 - Network+; Raw Water Transport
 - Network+; Raw Water Storage
 - Network+; Water Treatment
 - Network+; Distribution



For this example the capacity values would be:

This diagram shows how the 3 options would work in practice using a simple example WRZ

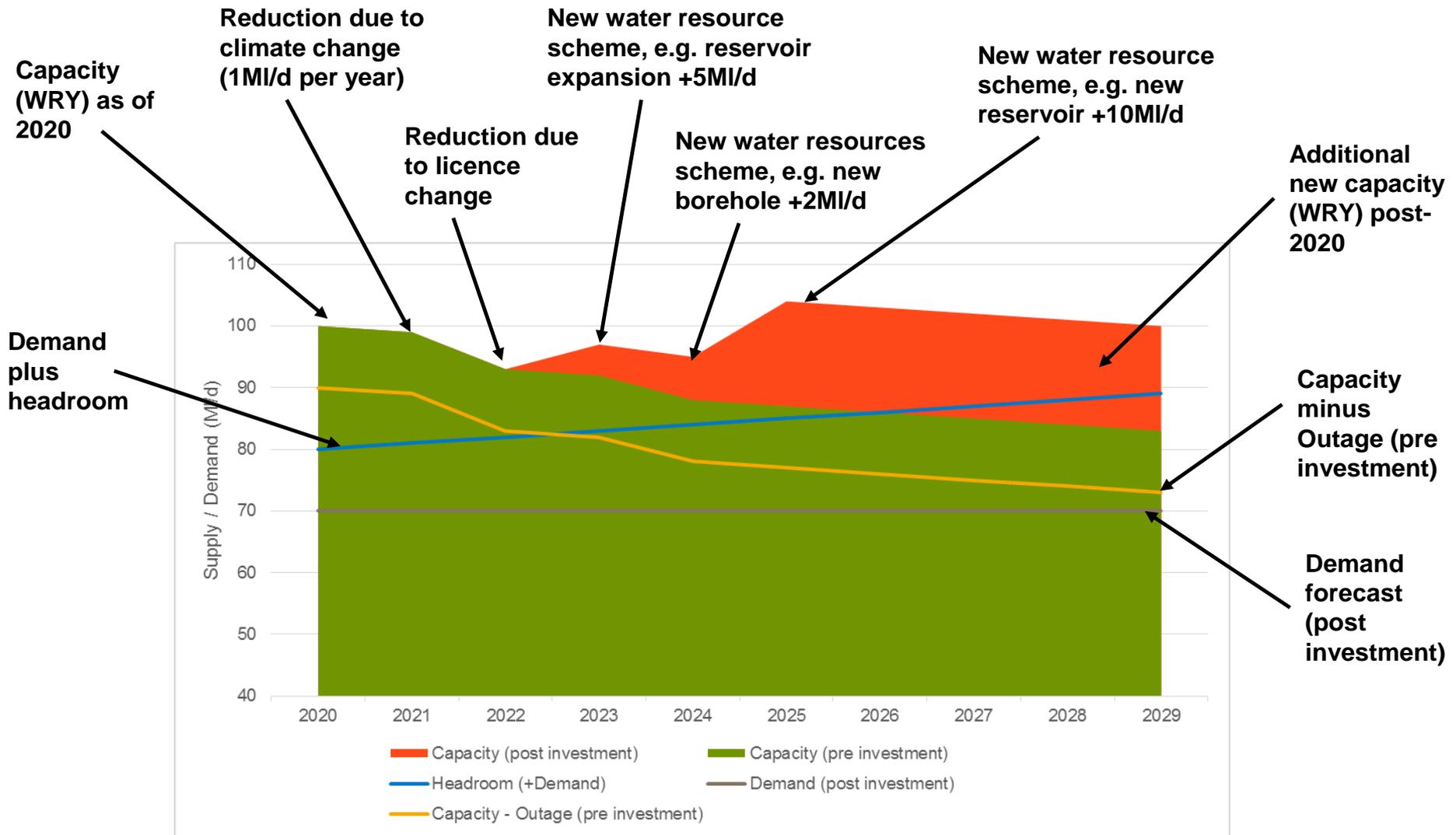
- On balance our view is that **Water Resources Yield** is the best option when compared against the capacity success measure criteria
- We have discussed these options and our preferred approach with **the EA and NRW**.

Rationale:

- This capacity measure only includes assets (and sources) as defined by the separate price control envelope (RAG 4.06) e.g. raw water abstraction assets.
 - Although a sub-component of the commonly used DO metric this will require separate reporting. As with all the potential measures there is a degree of flexibility to the calculation methods which will need to be addressed through assurance.
 - Minor changes can occur over time - either forecasts in the WRMP or as changes reported in the WRMP annual review. The changes to affect Water Resource Yield capacity will generally only be climate change and licence changes.
 - Average demand can be calculated based on a ratio and peaking factors from the capacity. The Water Resources Yield capacity is likely to be much greater than average demand.
- As a new measure (albeit a sub-calculation of DO) we will need to issue **simple guidance for how we are defining Water Resources Yield (capacity)** in this instance. This will include what assets contribute (or don't contribute) to this measure of capacity (using the RAGs) and how this should be reported and tracked over time.
 - Water Resources Yield (capacity measure) **will be consistent with the DO calculation for WRMPs**, but should be reported and tracked as part of Ofwat's APR.
 - Companies will **calculate the capacity for March 2020 and how this capacity changes over time** (as is done with DO for the WRMPs). This should then be reported annually as part of APR (both the pre-2020 capacity and any new incremental capacity).

Discussion: What are your initial thoughts about our proposed capacity measure?

Example of capacity tracking over time



As specified in the previous slides, both the 31 March 2020 capacity and post-2020 capacity will need to be reported and tracked over time

- There is a need to have **a transparent and easily assured approach** to capacity (both for 2020 and post-2020) tracking and re-assessment.
- We recognise that **capacity may legitimately change** as a result of the factors listed on the previous slides and have identified **three options for re-assessment**

1. Re-assessment

- Capacity re-assessment can happen every year as part of the WRMP annual review regardless of the factors causing change (note that a major change impacting the SDB may constitute a material change for the WRMP)
- Re-assessed 2020 capacity would be reported annually through the APR

2. No re-assessment

- No re-assessment of 2020 reported capacity
- 2020 capacity as defined and forecast in 2020 is reported annually through the APR

3. Limited re-assessment (with justification)

- No presumed re-assessment of 2020 reported capacity. The APR returns should report the capacity as assessed in 2020 and any forecast changes through the AMP.
- During the WRMP development, when the SDB will be re-assessed based on new data, there is a window for 2020 capacity re-assessment. This will be dependent on evidence of material change and a full audit trail of any changes.
- Yields and licence updates are likely to balance out over short periods and these small changes would not necessarily justify a 2020 capacity re-assessment. A change in level of service (backed by customer support) is an example where a re-assessment may be appropriate.



Capacity measure breakout session

In **3 groups** discuss the **3 options proposed for capacity re-assessment**:

- 1) Re-assessment
 - 2) No re-assessment
 - 3) Limited re-assessment
- include implications for reporting, unintended consequences and assurance for your option

15 minutes for discussion in groups

10 minutes for feedback

Lunch

The role of access prices in the form of control

Mat Stalker
March 2017

The components required to implement our form of control

RCV allocation to water resources

This is required as we are adopting a RCV based building block approach to the control

While the RCV as a whole will sit with the appointed company there will be an explicit allocation to the water resources control

The RCV allocation will be linked to pre-2020 capacity

Capacity measure

To implement our form of control we need to quantify:

- the level of capacity available at 31 March 2020
- the additional capacity provided to incumbents by the post-2020 incremental water resource investment funded through the price control
- the volume of annual water demand that can be accommodated by this capacity

Understanding of the link to access pricing

The Water Act 2014 will enable third parties to supply directly to a retailer supplying non-household customers (bilateral market in England)

To facilitate such a transaction the water provider will need to arrange access to the local incumbent's network and to pay an 'access price'

There are links between access pricing and the control, this could be structural or informal

In-period bilateral entry adjustment

This will be linked to the scale of bilateral market entry

In May we proposed that it would be a in period revenue adjustment

This risk only applies to post-2020 capacity

This has links to access pricing e.g. link between adjustment and the compensation payment

This session covers the links to access pricing

The two markets for water resources

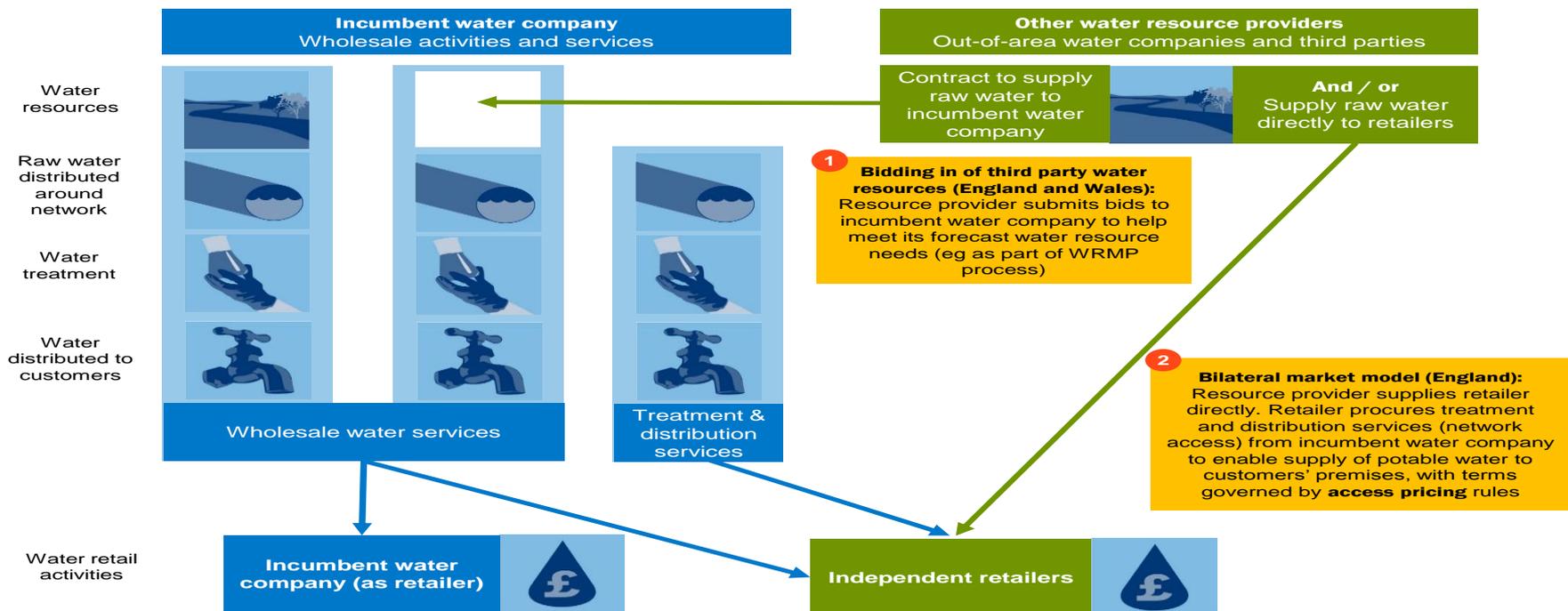
There are **two routes** that alternative water providers can use to sell water. They may choose to offer water in the **bidding market** run by one or more incumbent water providers. If they are not successful in the bidding market, they have spare capacity following the bidding market, or if they simply prefer, they can **sell water directly to a retailer supplying non-household customers**. To facilitate such a transaction the water provider will need to arrange access to the local incumbent's network and to pay an **'access price'**.

1. Bidding market

Alternative water providers can sell water directly to incumbent in the bidding market

2. Bilateral market

Alternative water providers can sell water to a retailer and pay an **access price** to the incumbent to transport water to end customers.

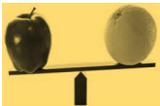


Within our previous Water 2020 publications we set out how we expect access prices to function in bilateral markets for water in England. We noted that competition is unlikely to occur if the access price for water resources is based on the average cost of incumbents water resources because of the **large disparity between average area costs and the costs of developing new resources**. This is primarily because of the combination of the RCV discount and the initial exploitation of cheaper sources.

Access prices can be considered as a discount on the wholesale price for the retailer. **It gives alternative providers the space necessary to compete**. We explained that where an incumbent does not need to develop additional capacity then we expect the access price to reflect the average cost of resources. To facilitate like-for-like competition, we expect the access price to reflect the average cost of new capacity in water resource zones where an incumbent has new schemes.

Entry will mean the incumbent has fewer customers. Therefore the water resources revenue cap will be recovered from fewer customers, meaning higher bills. Because of this **we propose to adjust the revenue cap to reflect the degree of entry and ensure customers are no worse off** (see next agenda item).

The access price and adjustments **could be structurally linked using a pre-defined mechanism**. Alternatively, **a more flexible approach could be applied**.



- **Access price based on ‘compensation payment’ to provide alternative providers a margin equivalent to incumbents cost of new resources**



- **Compensation payment funded from water resources control**



- **Adjustment to control to ensure remain customers no worse off because of entry**



- **Potential for a structural link**

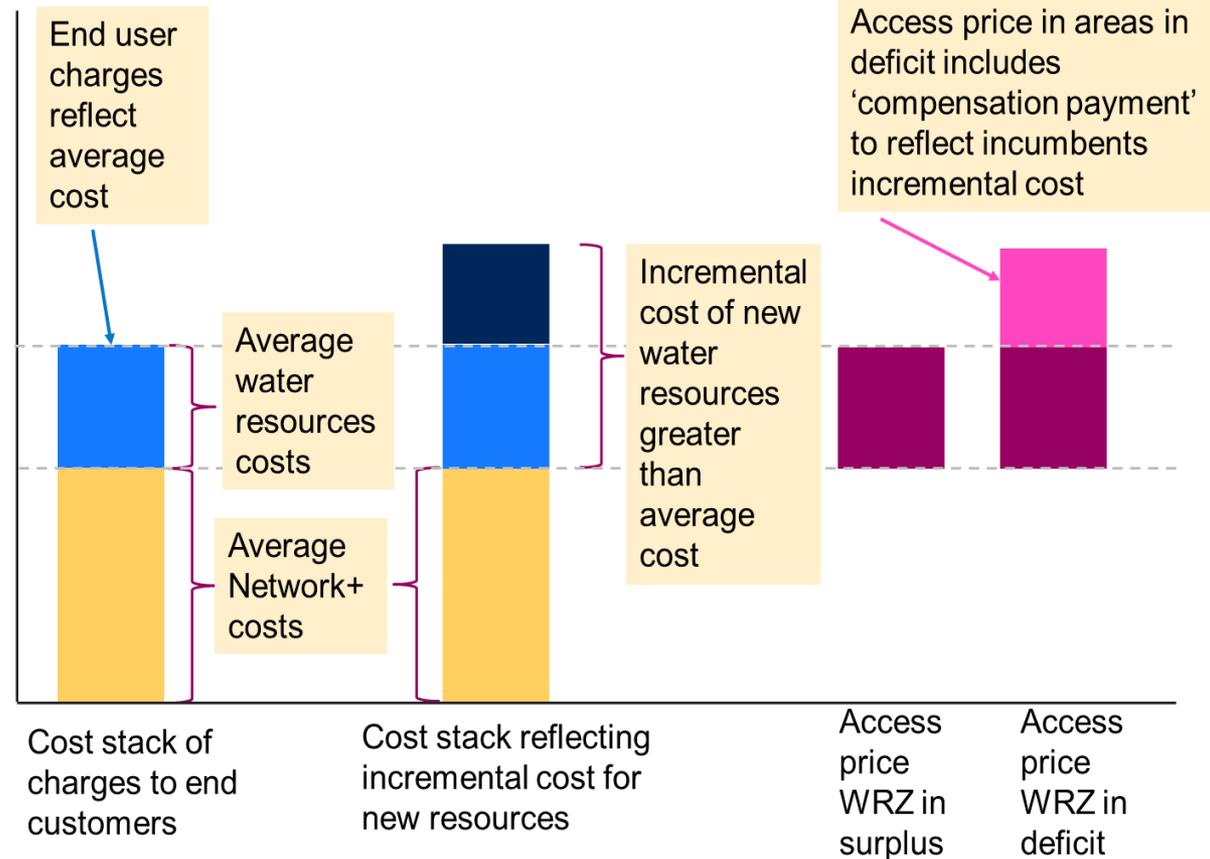
How the compensation payment works

Charges to end users reflect the **average area cost for incumbents**. This is a combination of the average cost of water resources and network+ costs (treatment and distribution). The cost of new resources is normally considerably greater than average costs. Incumbents are able to blend these costs. Alternative providers will not benefit from lower cost sources. **To be able to compete on equal terms the access price alternative providers pay will need to reflect the costs the incumbent will incur.**

For water resource zones in **surplus the access price will be based on the incumbents area average cost.**

For water resource zones with **planned schemes the access price is to be based on the average cost of new schemes.**

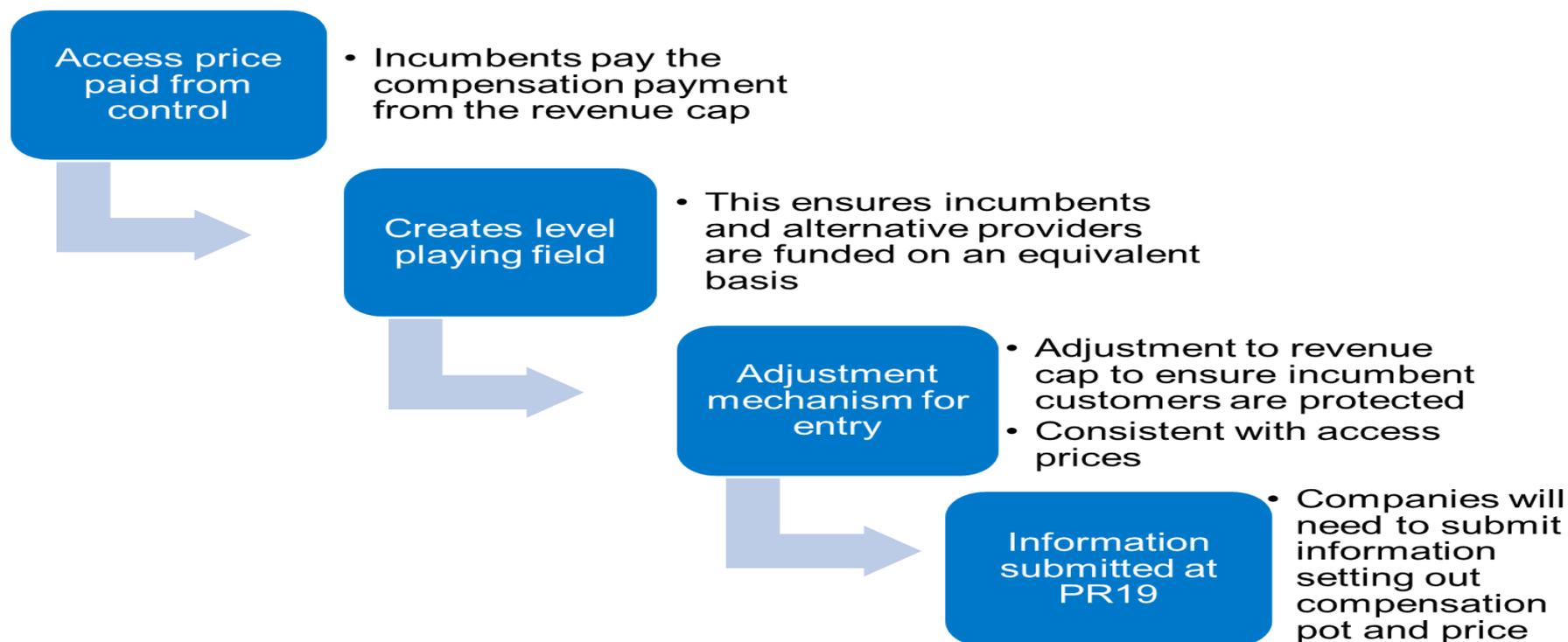
We have separated this into two elements: **the average area cost**; and **the compensation payment**. This will allow alternative providers to compete with incumbents **on a like-for-like cost basis** where new capacity is required.



As we expect the access price to reflect incumbents' own costs there is **a link between the control and access prices**.

The **water resources revenue caps will include funding for both the average area cost and any cost of new capacity**. For the incumbent to face competitive pressure the revenue it receives must respond to competitive entry. We expect that the **compensation payment will be funded from the water resources control**. In addition, insofar as any further adjustment is required, **there will be an adjustment mechanism to ensure that customers are no worse off because of entry**.

We expect companies to **submit information at PR19 which outlines the compensation payment(s) they plan to set in the next control period**.

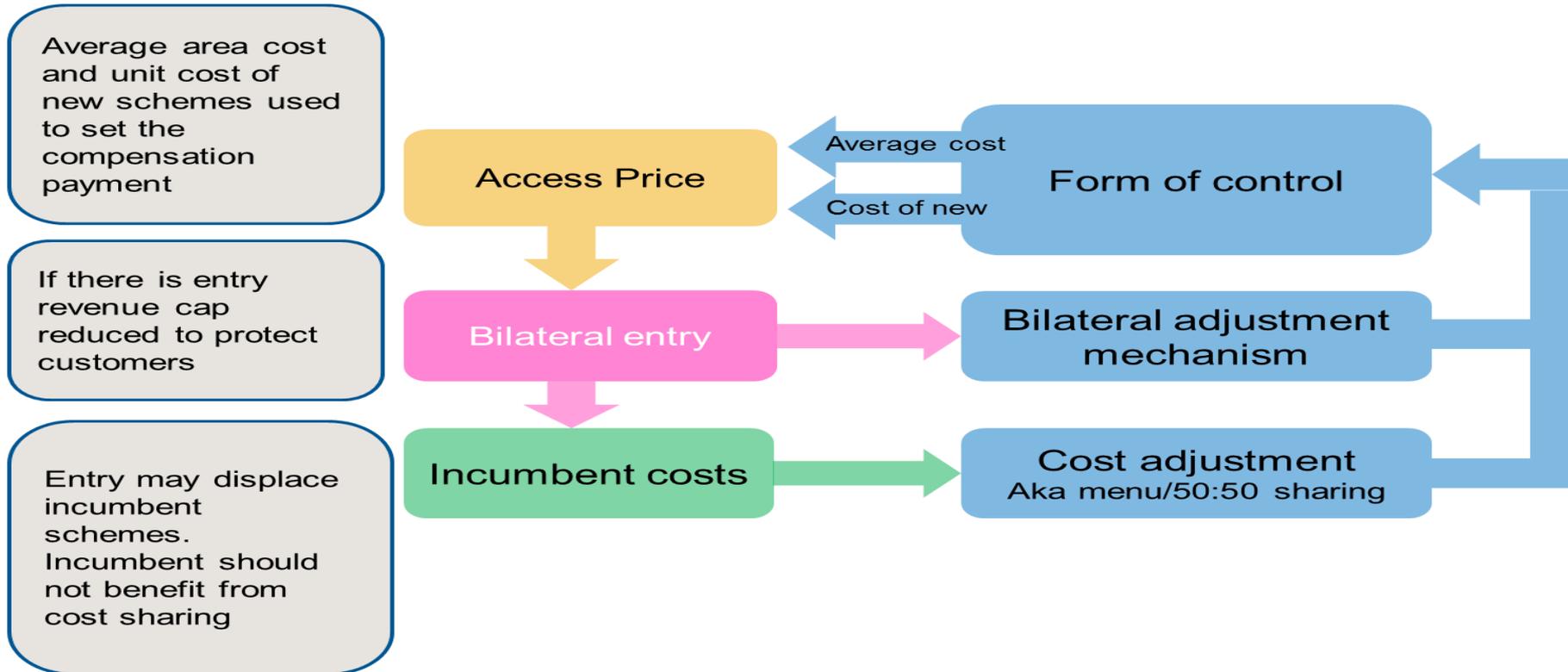


How access prices influence the form of control

As noted, we expect access prices to reflect the costs companies submit as part of PR19. Therefore, the **information in controls will influence access prices**. In turn, the level of access prices will influence the degree of entry. Entry by alternative providers will have further impacts.

First, there will **be an adjustment to the revenue cap to ensure customers are no worse off**.

Second, **entry may displace or delay spend by the incumbent**. Insofar as there is a form of cost sharing for new water resource schemes this should only apply to actual costs incurred and schemes progressed. Put differently, we do not expect that companies should be able to recover half (or some other proportion) of schemes that they do not need to initiate because an alternative provider makes water available.



The link between access prices and the control

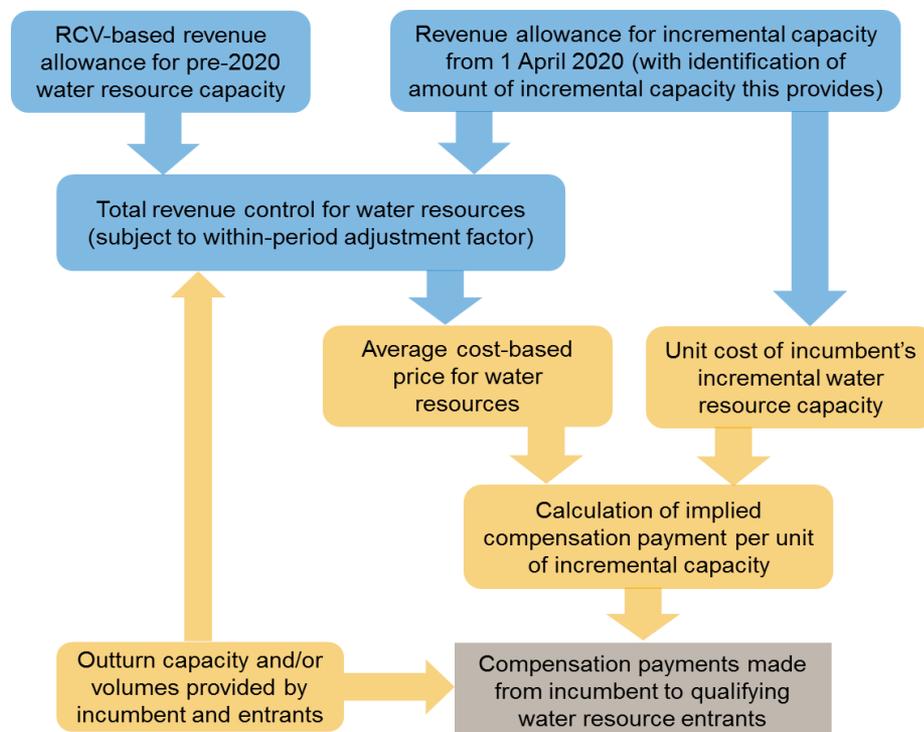
Funding for pre-2020 capacity will be on the basis of a **RCV-based revenue allowance**. Companies proposing new schemes will need to seek additional revenue to cover the incremental costs. Combined these will derive a **total revenue control for water resources**.

The average unit cost from the total revenue control along with the average unit cost of new incremental capacity together determine the **compensation payment and average cost elements of access prices**.

In turn, the **actual volumes of water provided by the incumbent and alternative providers will effect both the compensation payment and the incumbent's revenue cap**.

Entry will reduce the revenue incumbents receive.

Also, **entry in excess** of the incumbent's proposed schemes' capacity **will reduce the compensation payment**.





The links between access prices and the form of control **can be fixed structurally**. That is, we could set out a specific mechanism that links actual costs and volumes to both define the level of access prices and the revenue incumbents recover. **Alternatively, there could be no link at all.**

We consider that it is important that customers and competitors can be confident that **there is a link between the funding that incumbent receive and the prices they pay**. However, our current view is that it is unlikely to necessary, or beneficial, to set out a mechanistic approach that formally links the two rigidly. This is because the bilateral water resource market will not be active until part way through the next control and then is likely to be small and nascent. This suggests that instead **there may be considerable benefit in adopting a flexible informal approach in which we verify that proposed access prices at PR19 are broadly in line with incumbents' costs.**

Group exercise

Group 1: How could a structural link between access prices and the control work and what elements would it include? How would a structural link affect incumbents and potential alternative providers?

Group 2: How might we informally assess whether access prices are consistent with the costs recovered through controls? What information would companies need to submit? How would an informal assessment impact incumbents and potential alternative providers?

15 minutes for discussion in groups, 10 minutes for feedback

In-period bilateral entry adjustment

Colin Green
March 2017

The components required to implement our form of control

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The RCV allocation will be linked to pre-2020 capacity

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- the volume of annual water demand that can be accommodated by this capacity

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The Water Act 2014 will enable third parties to supply directly to a retailer supplying non-household customers (bilateral market in England)

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In-period bilateral entry adjustment

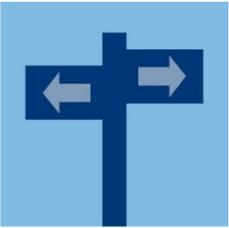
This will be linked to the scale of bilateral market entry

In May we proposed that it would be a in period revenue adjustment

This risk only applies to post-2020 capacity

This has links to access pricing e.g. link between adjustment and the compensation payment

This session covers the links to access pricing



In the session today we will cover:

- why we **need** an in-period bilateral entry adjustment
- where it **fits** in the form of control
- potential approaches to the **volume differential**
- potential approaches to the **unit cost measure**
- a **worked example**
- an **alternative approach?**



- We are adopting a **total revenue control**. However, over the period we expect to see the **development of the bilateral market** for business customers in England
- In **areas with entry**, all the **additional capacity** the incumbent provides after 2020 **will not necessarily contribute to meeting customer demand**
- Without an adjustment factor:
 - the incumbent would **earn the same revenue** during the price control period regardless of how much customer demand it supplies and irrespective of its market share relative to entrants
 - as the water resources revenue cap would be recovered from fewer customers this would result in **higher bills**
- Therefore, we propose **to adjust the revenue cap to reflect the degree of entry and ensure customers are no worse off**

Example of the impact of entry without an adjustment factor

- In a WRZ the incumbent has 200 business customers (100% market share) and a revenue allowance of 200 for water resources
- If as a result of bilateral market entry the incumbent loses 10 customers (5% market share)
- This will mean
 - Revenue without entry per business customer is 1 (200/200), after entry this revenue increases to 1.05 (200/190).
 - Customers remaining with the incumbent will face a bill increase of 5%

“..we do not consider it to be in customers’ interests for the price control framework to provide complete risk protection to incumbent water companies against the effects of bilateral market entry by third parties that can help meet demand for water more efficiently. It also provides the incumbent with appropriate incentives to anticipate capacity from other providers in its own investment decisions.”
Ofwat, May 2016 decision document, p188



Water resources revenue during PR19 will be the **sum of A and B** below:

A) Fixed revenue element for pre-2020 capacity

PAYG (fast money)

+

Run-off

+

WACC x RCV (for pre-2020 capacity)

B) Variable revenue element for post-2020 new capacity

PAYG (fast money)

+

Run-off

+

WACC x post 2020 investment (for post-2020 capacity)

-

Adjustment factor for bilateral entry

This will be small compared to the fixed element

The **adjustment factor** will reflect for post-2020 new capacity the :

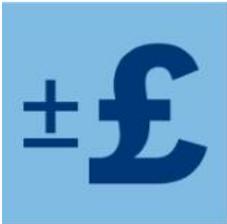
- **Volume differential** – extent to which customer demand is higher or lower than expected at the price review due to bilateral market entry
- **Unit cost measure** – annualised unit cost of the post-2020 new capacity, applied to the volume differential measure to calculate the financial adjustment factor to apply to the water resources control.
- The adjustment factor would be **set to zero** where there are **no forecast deficits** in any of a company's WRZs and also for **WRZs mainly in Wales**



We have identified **two potential options** to the volume differential used in the adjustment factor

Option for the volume differential	How it would work?	Implications
<p>1. Market share</p>	<p>The adjustment would be based on the principle that entry displaces market share of volume supplied. Where the market share varies from the forecast we can apply an adjustment for the difference.</p> <p>Example: incumbent forecasts it will meet 98% of retailer's demands. Bilateral entry accounts for the remainder. Outturn – 96% demand resulting in adjustment for difference (i.e. 2%)</p>	<ul style="list-style-type: none"> • The incumbent would be exposed to risks relating to its relative capacity/volume, not absolute level. • Provided companies demand sits within the range that informed their water resource management plans, the approach reflects the volume of water displaced by entry • Will require market share forecasts, volume forecasts, supported by peaking factors and headroom allowances (largely available as part of WRMP process) • Potential issues if there is unexpected demand growth – companies do not get extra funding of share remains constant but absolute volume has grown. • Approach can be applied symmetrically
<p>2. Capacity based</p>	<p>The adjustment is based on the planning approach for water resources. Incumbents plan their water resources to maintain the long term balance between supply and demand. Bilateral entry, displaces or defers the need to invest to provide incremental capacity.</p> <p>If the demand planned for is met by a bilateral entrant then revenues are simply reduced by the amount of the entry. If demand is beyond what was planned for then entry is assumed to meet unanticipated demand, without penalising the incumbent</p>	<ul style="list-style-type: none"> • The incumbent is exposed to the level of absolute entry where it displaces the demand that it has planned for – therefore more closely aligned to water resource planning approach • It is more intrusive in that it requires more detail on the initial planning assumptions (as part of the WRMPs) and ongoing updates • If applied symmetrically, companies could receive additional funding if there is an unexpected increase in demand (or potentially where abstraction reform reduced available supply for existing assets) • Approach can be applied symmetrically

Discussion point: What are your views on these options? Are there any options we have missed?



We have identified **three potential options** the unit cost measure used in the adjustment factor

Option for in-period unit cost measure	How it would work?	Implications
1. In-period revenue	We would calculate the revenue associated with the post 2020 capacity and divide it by the capacity to provided to estimate a simple unit cost. For example if revenue was 20 and the capacity provided was 20, the unit cost measure applied would be 1 per unit of capacity	<ul style="list-style-type: none"> • Simplest options to apply • The capacity would still sit in the post-2020 investment (e.g. not removed) • How would future adjustments apply if entry remains?
2. In-period revenue plus PAYG (slow money)	This would be similar to option 1, but alongside the revenue we would also take out the PAYG slow money element of expenditure linked to the capacity	<ul style="list-style-type: none"> • The capacity would be removed from post-2020 investment • A larger adjustment than just the revenue • Should there be a further adjustment if entry disappears and incumbents resources needed in future?
3. Whole life cost	Expect this to be broadly similar to 2	<ul style="list-style-type: none"> • The capacity would be removed from post-2020 investment • A larger adjustment than just the revenue • Should there be a further adjustment if entry disappears and incumbents resources needed in future?

Our current view is that the unit cost measure should be based on **revenue**

Discussion point: What are your views on these options? Are there any options we have missed?

A worked example using market shares and revenue

FYE (31 March)	2021	2022	2023	2024	2025				
<table border="1" style="margin-left: 20px;"> <tr> <td>Calculation</td> <td style="background-color: #d9e1f2;"></td> </tr> <tr> <td>Input</td> <td style="background-color: #d9ead3;"></td> </tr> </table>						Calculation		Input	
Calculation									
Input									
A) Demand and capacity requirement forecasts at PR19									
Total water resource capacity in WRZ at 31 March 2020									
Existing capacity at 31 March 2020: MI/day dry year peak week	385.00	385.00	385.00	385.00	385.00				
Volume forecasts at time of PR19 review									
Total WRZ annual average demand (normal year): MI/day	250.00	250.00	270.00	270.00	270.00				
Incumbent's annual average demand (normal year): MI/day	250.00	250.00	265.00	265.00	265.00				
Peaking factor: dry year peak week demand / normal year annual average demand	1.40	1.40	1.40	1.40	1.40				
Headroom allowance: capacity required vs peak demand	1.10	1.10	1.10	1.10	1.10				
Capacity forecasts at time of PR19 review									
Total capacity required from incumbent: MI/day dry year peak week	385.00	385.00	408.10	408.10	408.10				
New capacity needed from incumbent from 1 April 2020: MI/day dry year peak week	-	-	23.10	23.10	23.10				
B) Water resources revenue control determination at PR19									
RCV-based building blocks allowance for pre-2020 capacity									
RCV-based revenue allowance for pre-2020 capacity (calculation details omitted)	200.00	200.00	200.00	200.00	200.00				
Price control allowance for additional capacity at PR19 review									
Total revenue for new capacity	-	-	5.00	5.00	5.00				
Amount of new capacity funded from incumbent	-	-	23.10	23.10	23.10				
Unit cost allowance on capacity basis: £ m per per MI/day dry year peak week	-	-	0.22	0.22	0.22				
Unit cost allowance on volumetric basis: £ m per year per MI/day annual average	-	-	0.33	0.33	0.33				
Water resources total revenue control before adjustment	200.00	200.00	205.00	205.00	205.00				
C) Calculation of within-period adjustment factor based on outturn volumes									
Outturn demand during price control period (reflecting effects of entry)									
Incumbent's annual average demand: MI/day	250	250	265	265	291.5				
Bilateral entrant total annual average demand: MI/day	0	0	5	10	5.5				
Outturn total WRZ annual average demand: MI/day	250.00	250.00	270.00	275.00	297.00				
Variance in incumbent demand vs forecast that is attributable to bilateral market entry									
Incumbent forecast of its market share of annual average demand	100.0%	100.0%	98.1%	98.1%	98.1%				
Outturn incumbent market share of annual average demand	100.0%	100.0%	98.1%	96.4%	98.1%				
Change in market share vs forecast * total forecast market volume: MI/day	-	-	-	4.82	-				
Financial adjustment for variance in demand: £ m per year	-	-	-	1.61	-				
Net within-period financial adjustment	0.00	0.00	0.00	-1.61	0.00				

Step 1: At PR19 determine the existing capacity at 31 March 2020 and the expected change in it over PR19. Volume forecasts, supported by peaking factors and headroom allowances will also be required. These are used to derive a total capacity requirement and identify if additional capacity is required

Step 2: Determine the revenue allowance for pre-2020 capacity and for post 2020 capacity. The unit cost allowance for new capacity post-2020 is calculated as a ratio between the revenue allowance and the amount of new capacity (also capturing seasonal peaks and headroom)

Step 3: Calculation of the within-period adjustment is obtained by multiplying:

The additional capacity (MI/day) required from the incumbent that is not utilised due bilateral market entry. This is calculated by assessing the change in market share versus forecast; and **By the unit cost allowance on volumetric basis**



- We did consider in May 2016 whether we could rely on a **total revenue control, with any adjustments relating to bilateral market entry made through financial adjustments in subsequent price control periods.**
- Over the **longer term** this might achieve a similar financial effect to having an in-period adjustment
- However, we concluded that this approach would be **inferior to an within-period approach** as:
 - an in-period adjustment approach is a much more **transparent way** to make adjustments than reliance on financial adjustments which would be implemented as part of subsequent price control reviews
 - the within-period adjustment provides an **explicit way to signal our adapted approach** for water resources
 - the development of the adjustment mechanism will be an **important part of the price control framework** for water resources and warrants attention in the foreground rather than the background

Discussion point: What are your views on this? Do you think there is a strong case to fully develop an in-period adjustment for PR19?



Bringing it all together and exploring outstanding issues

Colin Green
March 2017

We are introducing a separate control for water resources at PR19, this will help:



Develop markets that work for the benefit of customers



Encourage high-quality long-term planning



Improve information transparency



Assist with developing better targeted regulatory incentives



Increase the focus on water resources



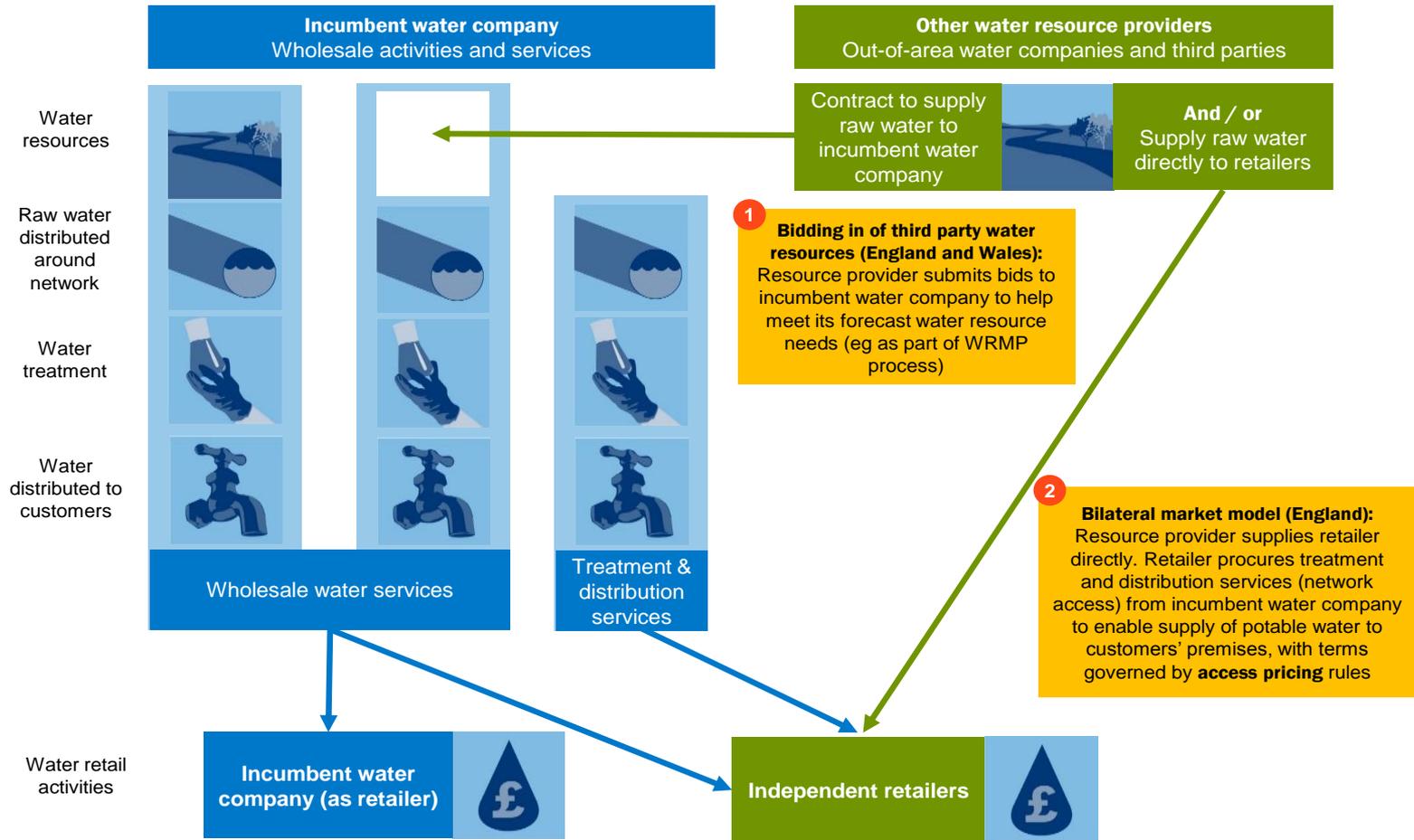
Limit the potential effect on financing costs



Focus markets in relation to new water resources

- The form of control is not a means in itself but a **means to end**
- Namely through it we are trying to **achieve the benefits that a separate control offers**
- This is help us meet our **long term vision**, which is to incentivise efficient use of existing and future water resources to deliver resilient water supplies
- **The markets** we envisage for water resources are set out on the next slide
- Today has focused on the **four areas required for the implementation** of the control set out on slide 11
- This session will provide **an opportunity** to discuss any **unresolved concerns** from the days discussions, but also any **outstanding issues** that we may not have covered.

Context – the two markets for water resources



The two potential markets complement one another. An alternative water provider (who could be an out of area incumbent or independent third party) can enter either through the **bidding process** and achieve long term certainty or agree terms with an independent retailer (**bilateral market**) which may provider less certainty

- We have not covered all the **wider policy areas/issues** linked to the separate control today
- **Some of these wider areas** are shown in the figure below

Total revenue control

Fixed revenue element for pre-2020 capacity + Variable revenue element for post-2020 new capacity

Pre-2020 RCV guarantee

Adjustment for bilateral market entry

Demand utilisation risk for significant new investment

Cost of capital for control

Resilience

Cost assessment for water resources

RCV allocation for water resources

Direct Procurement for Customers

Access pricing framework for water resources

PAYG rates for the control

Post 2020 investment

Water resources definition envelope

Water Resources Management Plans

Outcomes for water resources

Compliance with control



- In **4 groups** we want you to discuss any **outstanding issues remaining for the water resources form of control**
- Areas to cover:
 - What are your unresolved concerns and outstanding issues?
 - Are you comfortable you understand the options presented?
 - Do you have any preferences on the options and how they fit together?
 - Do you see any conflicts with the wider policy framework set out on the previous slide?

20 minutes discussion in groups

10 minutes feedback

Meeting close

Colin Green
March 2017