How could we simplify ODI rate setting?

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Customer research into water services should consider the wide range of customer priorities for water services, and the wider value to society and the environment of the water sector.

At recent price reviews, including PR19, companies carried out research into performance incentives top down, in addition to the bottom up Willingness to Pay surveys used to inform cost benefit analysis used to explore short and long term plan trade-offs.

At PR19 standardising performance commitments and incentive rates produced range of company-specific total incentives, in terms of Return on Regulated Equity (RoRE).

In standardising performance commitments and incentives at PR24, we suggest that customer research should be used to allocate ODI incentives top down to common performance areas. For the same level of service and risk, this would ensure a standard RoRE incentive on companies.

As not all companies have the same historic level of service, future plan needs or necessarily the same customer priorities, we suggest there may be a number of standard scenarios for top down RoRE allocation that Ofwat may need to use. This can be tested through this customer research. We explore how this top down research may be simpler and more logical than individual ODI rate research that is similar to company WTP research used at previous reviews.

1. Summary

Using customer research to inform company service levels has become an important part of recent water company price reviews. The reason for customer research to have greater weight in decision making reflected that once the era between 1990 and 2005 of statutory obligations driving service levels and bills, there were more trade-off decisions to be made. These were not just decisions about the next five year price review period, but matters of risk to service levels when faced with uncertainty on the environment, consumer acceptability and affordability, and in that context the future maintenance needs of recently improved water and wastewater functions.

A specific driver for the use of customer research to understand service level preferences and attitudes to risk (and return) was also in the context of decision making that had a long-term impact, complex issues of intergenerational equity and potential disagreements about whether polluters or beneficiaries should pay for very complex challenges where cause and effect is rarely clear. Customer research on matters of risk was challenging, but water companies, economic consultancies, asset managers, regulators, government and market research firms worked together to meet this challenge. Experimentation in understanding customer priorities to design choice experiments that could estimate economic values was developed.

Inevitably economic valuations raise questions of applicability, given the complexity of the questions the research was attempting to value. Testing with customers and stakeholders, and transparency on how the information revealed was being used to support decision making, was also part of the process – testing acceptability of the potential impact of those decisions.

Many of the survey topics, whether service levels and long term risk to the environment are outside of customers' direct experience which means altruism and existence potentially form large parts of the social and environmental values being obtained. So in practice a range of valuation sources was often used, with judgement or further research used to determine how to weight different valuations.

Well before PR14, the economic regulation of the water sector recognised that the decisions on water company future service levels should consider the social and environmental value as well as the directly incurred cost. At PR14 the principle that as far as possible the service levels should be set where the marginal cost to customers should equal the marginal benefit to customers and society was used to set performance incentives. In part this reflected uncertainty in both costs and benefits – by providing financial incentives for cost and performance levels each company would in theory adapt its plans efficiently as lower cost opportunities or better information came along. Prices would adjust with performance.

At PR19 Ofwat questioned why there was such a big variation between incentive rates proposed by companies, one of the causes of which were differences in Willingness to Pay (WTP) values from the stated preference surveys that companies used to inform valuations. Irrespective of the trade offs that companies had considered, and perhaps because companies also had a range of ways of utilising different survey evidence ("triangulation") and calculating incentives, Ofwat attempted to apply some normalisation across companies that intervened where there were high or low outliers. In response to these challenges, companies in some cases went back to customers and tested their appetite for such incentives top down, through research specifically on packages of incentives, often as part of acceptability testing of a particular set of plan service level, bill and incentive proposals.

For PR24 Ofwat proposes standardised Outcome Delivery Rate "ODI rate" research to try and remove unexplained variation from different company incentives. This moves away from the previous principle that such outcome incentives should be set based on where marginal costs equal marginal benefits, based on company specific stated preference surveys and costs.

We conclude in this analysis that the same matters of judgement that affect company WTP stated preference surveys are likely to apply to ODI rate research, and outside of the context of company plans will be very difficult to explain. The challenge arises from companies having to decide on what to assume from historic data, what the risk faced by customers on service levels is, and what the cost may be to avoid this. Many key aspects of the incentives themselves, such as leakage and asset health, are often not included in package experiments for stated preference research, but interpolated through additional research. This is because of the limited number of metrics that can be included in such research, and that the research should have greater validity if customers directly experience the service level concerned.

If we are removing incentive setting away from research that informs specific plan trade offs, there is a much simpler option than "bottom up" choice experiments with customers. This is to allocate incentive value "top down" from the return on regulatory equity that Ofwat put at risk in the methodology. Customer research into packages of incentives can be used to allocate this between different outcomes. This research could also be designed to:

- Test whether variations between companies on level of performance (including comparative information) makes a difference to customer's incentive priorities
- Test the appetite for locally set compared to standardised national measures
- Test the range over which the incentives are applied, which is at least as important in ODI design as the incentive value itself.

In conclusion, the attempts to set incentives bottom up where marginal costs equals marginal benefits had a clear logic for the PR14 and PR19 methodologies where companies were defining bespoke price review packages, and accompanying incentives, where marginal costs and marginal benefits. There was significant complexity in trying to impose top down comparisons in search of the "right" incentives on top of this framework. This was not a function of poorly specified research or information asymmetry between regulators and companies on cost and service levels, although inevitably such factors do exist and make the process more complex and uncertain.

Separating customer research to derive the right five-year plan in a long term context, and to consider outcome incentives separately as part of a risk and return package, potentially informed by testing against long term scenarios that are part of a regulator's assessment process for an individual companies plan, could become a logical next step for water research. Setting ODI incentives through allocation to a package of outcomes derived from a clear and logical framework for risk and return will make incentives easier to explain and calibrate. A top down research approach to testing customer views on risk and incentives provides a clear role for engagement with customers and their representatives, and wider stakeholders, rather than placing reliance on a single research approach. A top down allocation of ODI RoRE also removes the need to assume a totex sharing rate at all in calculating incentives, another beneficial simplification.

In practice, companies have never relied solely on WTP / stated preference surveys in developing outcomes and incentive proposals, which reflects the trade offs and complexity in balancing risk and return. It is hard enough to achieve this balance for one company plan, let alone for a regulator with many to scrutinise and compare. However there is research available from water company experience at PR19 which would inform such a scenarios-led top down approach to setting outcome incentives with much more clarity than was the shared experience at PR19.

2. A logic for simplifying ODI setting and risk & return

1. At PR14 & PR19, incentive rates and service levels were set “bottom up”, using a market proxy where marginal cost = marginal WTP for the improvement.

Even though stated preference customer research surveys were used to obtain some values used in plan development, and to inform the incentive rates set based on marginal cost = marginal WTP (adjusted for totex cost sharing incentives between customers and companies), a single survey result would rarely be applied without a wider context. Triangulation described the general principle of considering a range of incentives. For instance, Bristol Water used a scenarios approach to triangulate service levels for different bill contexts through customer research, using this principle.

2. This approach to incentives reflected local company specific service levels, with trade offs through customer research and engagement used to inform both company plans and ODI design.

Differences in service levels and priorities meant RoRE ODI rates could vary. In any case the risk and return impact varied by company, including where Ofwat compared and partly standardised incentive rates, design and service levels at PR19.

3. With standardised interventions on PC levels and ODI rates and design at PR19, Ofwat sometimes had to constrain its interventions in order to maintain a risk and return balance,

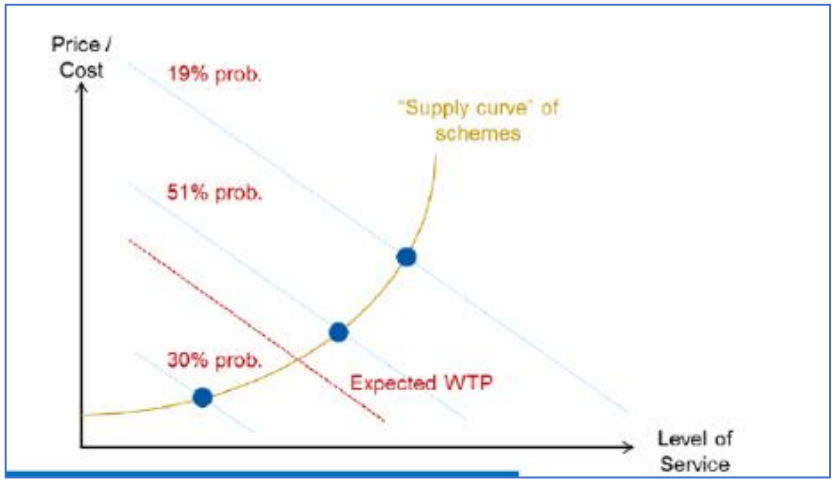
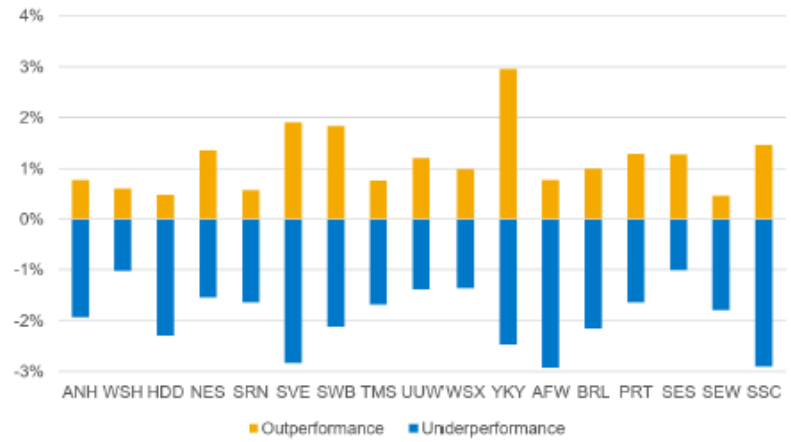


Figure 3.6: PR19 ODI risk ranges calculated as a percentage of regulatory equity



Source: Ofwat

4. For PR24, the initial design suggests more standardised packages of outcome incentives. Ofwat intend to specify the service level consistent with base expenditure. Variations in service levels for individual companies could result in cost adjustments to base expenditure (which could therefore be either positive or negative). Changes in future service levels from a standard level would be considered as enhancement expenditure. For enhancement expenditure and service levels, Ofwat may set output related Price Control Deliverables would be used, which may reduce some use of local bespoke ODIs and incentive variation between companies that featured at PR19.

The PR14 & PR19 approach to setting incentives based on marginal benefit less marginal cost (adjusted using a totex sharing rate) may therefore not apply. Customer research would still be required to set the ODI rates for the outcomes that are consistent with base expenditure allowances Ofwat set, and a cost sharing rate can be assumed to take into account costs (e.g. the incentive would be 50% of the benefit value, if the totex sharing rate was 50%). Based on the evolving list of potential performance commitments, many of the metrics, particularly on asset health, have not featured directly in past company WTP stated preference customer research.

5. For risk & return, there are a number of reasons why the incentives package may need to vary between companies. It is possible that the long-term environmental and water resource destination for companies may vary. The pressures on the water service may be different from wastewater. Companies have different historical levels of service and network resilience, in particular for key aspects such as leakage and mains bursts. Innovation and other local factors may mean that for some companies, an efficient plan for their customers may suggest a different direction. It is a hard task for regulators to reflect all of these factors without the burden (and risk from information asymmetry) in scrutinising company plans in a fully bespoke fashion. It is however difficult to design valid customer research without exploring where such local differences matter to customers and stakeholders. Profiles of efficient expenditure and delivery can vary by company over time. To reveal information, Bristol Water has suggested (see right) that it may be worth exploring a number of standard packages, which could see both totex and ODI incentive packages vary, for instance where maintenance costs were increasing you could see a higher totex sharing rate and more asset health ODI risk within a package, as with higher allowances there is less risk of short term totex underperformance. To balance risk and return for some plans, there could still be a role for local incentives

	Water and wastewater	Water only	Wastewater only
Customers receiving excellent service everyday	C-MeX (residential customer measure of experience) Possibly D-MeX (developer measure of experience) Possibly B-MEX (business customer measure of experience) Possibly R-MEX (retailer measure of experience)	Water supply interruptions Compliance risk index (CRI) measuring drinking water quality compliance Customer contacts about water quality Possibly Event risk index (ERI) measuring impact of drinking water quality problems	Internal sewer flooding External sewer flooding Possibly we could combine the above two as companies are developing a measurement of the impact on customers from flooding
Environmental outcomes	Biodiversity Operational GHG emissions Possibly embedded GHG emissions	Leakage PCC (per capita consumption) Business demand Possibly these could be combined to report distributional input	Pollution incidents Discharge compliance Storm overflows Possibly EPA star rating in addition or instead of above 3 Bathing water quality Possibly river water quality
Asset health and operational resilience	We will decide these following the findings of the UKWIR project 'Future Asset Planning' expect in December 2021.		

Ofwat (November 2021) – PR24 and beyond: Performance Commitments for future price reviews

	Standard	High enhancement spend / environmental obligations	High maintenance spend needed	Long term: Innovative and ambitious
Finance and customer service outperformance	1.00%	1.00%	1.00%	1.00%
Min. Totex outperformance	1.50%	1.50%	3.00%	1.50%
Investment totex outperformance	0.50%	1.50%	1.00%	0.00%
Local ODIs outperformance	0.50%	0.00%	0.00%	1.00%
Resilience ODIs (e.g. supply interruptions) outperformance	0.30%	0.30%	0.00%	0.50%
Environment (e.g. leakage, PCC) outperformance	0.20%	0.20%	0.00%	0.50%
Asset health ODIs outperformance	0.00%	0.00%	0.00%	0.00%
Base return	4.00%	4.00%	4.00%	4.00%
Finance and customer service underperformance	-1.00%	-1.00%	-1.00%	-1.00%
Min. Totex underperformance	-1.50%	-0.50%	0.00%	-2.00%
Investment opex underperformance	-0.50%	-0.50%	0.00%	-0.50%
Local ODI underperformance	-0.50%	0.00%	0.00%	-1.50%
Resilience ODIs (e.g. supply interruptions) underperformance	-0.50%	-1.50%	-1.00%	-1.00%
Environment (e.g. leakage, PCC) underperformance	-1.00%	-2.00%	-2.00%	-1.00%
Asset health ODI underperformance	-1.00%	-1.00%	-3.00%	-1.00%
Upside	4.00%	4.50%	5.00%	4.50%
Downside	-6.00%	-6.50%	-7.00%	-8.00%

6. If we can base the design of outcome incentives on a "top down" total amount of Return on Regulated Equity (RoRE) that we want to allocate to ODIs, we can test with customers and stakeholders how this balance of risk and return compares to their views. There are two main benefits. First, we have simpler incentives research with customers. Second, we may avoid the risk that in standardising, we merely solve standardisation in one aspect (e.g. service levels and ODI incentive rates), but still end up with risk and return that even on a standard, notional company, basis.

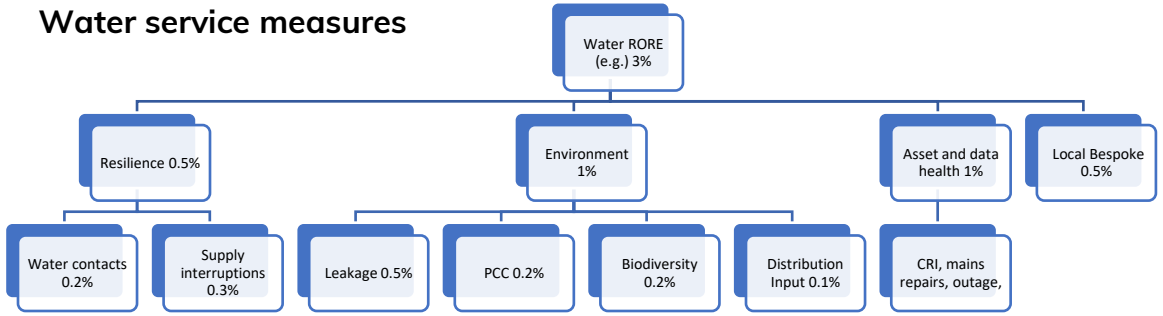
This approach would leave company plans, and trade-offs to justify any bespoke ODIs, informed by company research. It may be relatively easy to standardise or centralise such top down research. By undertaking a top down allocation exercise through customer research (which we explore how this can be done next). We illustrate here what the outcome may look like for the water service, customer experience and combined measures, and separately for wastewater measures. Customer experience measures are included as, from a customer perspective, this is part of the package of incentives that drives companies to deliver for them.

We leave space in this example for asset health measures (including the DWI measures such as CRI, plus mains repairs) as this there is a question as to whether customer research should consider asset health as a single topic, rather than breaking down into component metrics. This rather depends on what the metrics are, and from a risk perspective whether they represent benchmarks based on past performance, or are forward looking predictors based on future factors that affect the performance of those assets.

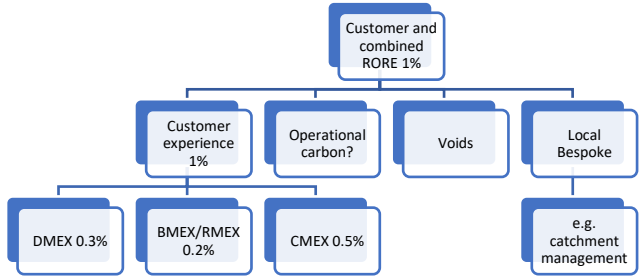
If ODIs were set top down on a standard % of RoRE, standardised or centralised research could be used to

a) Test acceptability of scenarios / plans
b) To inform allocation of ODI/RoRE value between measures
c) Test design of ODIs to allocate value in support of risk and return balance

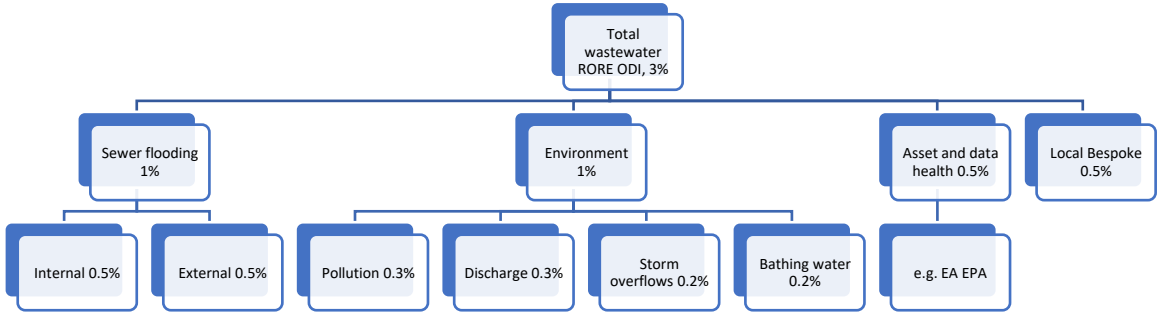
Water service measures



Customer and combined service measures



Wastewater measures



3. Why use a top down RoRE ODI allocation

Once customer research has been undertaken to allocate RoRE top down to individual performance commitments, Ofwat would need at some point to provide guidance as to how it should be applied in setting outcome incentives. This could be done in advance of companies developing their plans, or as we suggest there may be a package of scenarios which provides companies with scope to engage further with customers, prior to acceptability testing.

The conversion of the top down RoRE to individual metrics is straightforward and would be linked to the risk and return decisions Ofwat make on notional gearing, and the individual company average RCV, both of which would be fixed at price review final determinations. This approach has one added simplification over PR19, as it could remove the step where incentive value has to be normalised as £/unit change/household in order to make comparisons between companies. The calculation would be separate from water and wastewater (as they have separate RCVs), and any retail ODIs could be on the appointee RCV.

As companies find in WTP studies in developing plans (and Ofwat in reviewing ODIs at PR19), the key challenge is to identify what service level to allocate the value of the incentive over, in order to describe the incentive rate as a £ per change in service.

To date, WTP stated preference studies, using a reasonably standard approach the water industry developed, has been the best available option as it aimed at consistency between company plans, the cost benefit analysis that justified the proposals, and the outcomes incentives. This has generally been used for marginal decisions beyond statutory obligations.

Often this reflects elements such as legal water quality compliance, where we need incentives, but could not base them on WTP values meaningfully obtained through customer research. In practice, we can interpolate through costs to rectify, estimates of damage etc. However, there will be a wide range of estimates and approaches, for ultimately what are regulatory judgements. Companies can however explore this in research that explores customers views on how companies should be incentivised when they deliver more, or less than the service levels included in bills.

Other aspects that are often interpolated through secondary study include asset health on works and mains and leakage, because the metric is a water industry activity that, in the long term, is an indication of potential long-term inefficiency in the way services are delivered today. Some of these decisions may be less driven by economic costs and valuations for the long term than in the past, for instance if specific leakage targets for instance are a long-term statutory obligation.

So our need for research may be evolving away from setting service levels based on cost benefit analysis, towards acceptability of a plan in the long term context, and the package of service incentives that recognises that there should be flexibility in the timing of company delivery as events unfold (both positive and negative.

In summary, we are unlikely to find that a single standardised stated preference survey will help to resolve the challenges with such surveys. The questions of why such surveys produce a range of results may remain, and we may find the single survey hides the basic challenge that is we are asking customer views on complex and uncertain issues. The challenges are:

- The customer understanding of risk when presented with such package of service risk levels
- The lack of direct service failure experience / understanding from many survey participants
- The potential differences between Willingness To Accept (WTA) deteriorations in service levels and WTP for improvements, which would be particularly relevant for ODI rate research ("loss aversion). This logical finding has been difficult to identify consistently in stated preference surveys*
- Recent research by Paul Metcalfe suggests 59% of WTP variation is due to the scope of service change offered (ie a change in risk from 10% to 5% is valued more than from 50% to 45%, even though in both cases the reduction in risk is 5%)**.
- Research by Bristol Water found very little significant factors that explained differences in WTP research at PR19, including no consistent outliers that could easily identify a particular methodological issue.

*An example paper on this topic from 2010 is available from http://econo-my.com/features/Benefit.doc

** https://www.ofwat.gov.uk/wp-content/uploads/2021/09/PJM_Economics_Water_Price_Reviews_Ideas_Lab_Submission.pdf

4. What service levels do we assume in allocating incentives?

It is difficult to set incentives without considering the impact on risk and return. This matters both for protecting customers, to ensure companies do deliver effectively and efficiently. It matters to companies and regulators, because we want an efficient regulatory process that sets out the adjustments to the inevitable uncertainties both face when agreeing plans. This means we want to set adjustments *ex ante* as far as possible. It also matters to investors, because if the industry performs as tasked, investors should earn the rate of return that has been assumed. The risk from incentives should be predictable enough to encourage long term investment when faced with uncertainty and short term variability – all in all we are after a "Fair Bet", but that also needs to be a robust enough bet for most normal circumstances for the price control period. But it also needs to be trusted enough to hold up to scrutiny in application – is it defendable and applicable in practice.

One of the key things necessary to reach a robust incentive design is to apply the incentive rates over an appropriate band of performance. One of the key challenges with stated preference surveys is that there may be a budget constraint – a sense that WTP does not vary in a linear manner with different changes in performance. The interaction between budget constraints, the differences between WTA and WTP, and the challenges of scope may in any case be difficult to untangle.

Customer views are unlikely to be linear, and it may vary between metrics. For leakage and asset health metrics, variation in weather may be a factor that means customers do not want incentives applied over a very narrow band of performance. Equally customers may not want exceptionally bad weather to result in penalties so hard that it affects long term investment. This is a challenge that affects both ODI rate research based on "WTP type" approaches and in allocating a top down "RoRE" range to incentives.

The RoRE concept in risk and return requires assumptions on P10 and P90 ranges – the performance expected 80% of the time, and requires a central P50 estimate to be established. It also requires some assumption of a distribution of likely performance (e.g. normal, triangular, even, a long risk tail reflecting low probability/high consequence events) or otherwise within that range.

Incentives also apply outside of the P10 and P90 ranges, but are generally harder to predict – incentive design requires a collar and cap to apply to avoid excessive risk, and also to reflect a level of performance at which the regulatory may need to intervene to protect customers (and in some circumstances for external factors both investors and customers).

In theory for ODI rate research, if we have enough experiment package levels, we can discover customer views on incentives, including where caps and collars are set for P10 and P90. In practice this seems to be unlikely. The main areas where such issues arise are on asset health, leakage and other aspects where we require incentives, because we are uncertain that the past will necessarily be like the future, with risks such as climate change inevitably uncertain.

The main issues with understanding ranges of performance can be driven by a range of factors, which are all standard regulation and water sector challenges (ie are not really driven by this problem), and particularly relate to the challenges in understanding asset health / resilience and whether past trends are useful in forecasting the future. e.g.

- Uncertainty of variability – e.g. weather, impact of performance improvements
- Uncertainty of external influences i.e. will be the past be like the future?
- Uncertainty of impact i.e. between companies
- Information asymmetry between companies and regulators when presenting risk and performance information
- Attribution of cause and effect (what is inside and outside of management control in the short, medium and long-term is a not definitive).

If we can solve the issue of what the service level range is to apply the RoRE range to, then we can simplify the approach and involve some of the risk and return challenges in using bottom up ODI rate research to undertake incentive design. It also may avoid the limitation of the number of performance measures you can include in such research.

We think that outperformance and underperformance incentives are different in terms of the challenges

For outperformance, the design issues appear to be relatively straightforward:

- For ODIs there is less issue with setting P90 ranges, which are inevitably uncertain with forecasting future performance.
- For ODIs where outperformance is appropriate (which excludes most asset health measures where uncertain variation such as weather has the greatest impact), then the performance commitment for one period will normally be in the context of a long-term plan for improving performance. Without this, there is less case for outperformance incentives.
- If this is sector wide performance commitment level, or the five year performance change is standardised, then the ODI change can be standardised (e.g. if the RoRE allowance for leakage is 0.2%, and the increment beyond a performance commitment is for a 10% reduction, then the outperformance incentive 1% is 0.02% RoRE, with a outperformance cap at 10%

For underperformance, setting service level ranges is more complex:

- If service levels and service changes are standardised by Ofwat, then the gap between Performance Commitment and an underperformance collar level can also be standardised.
- It may be that this standardisation should vary by scenario, and also vary with the totex sharing rate.
- Past performance levels also provide an approach, and for asset health measures such standard interventions based on a mix of company and industry analysis by Ofwat were carried out.
- Experience of PR19 suggests technical approaches to calculated P10 levels are likely to remain subjective, in part because the past only plays a partial role in helping to explain the future – otherwise we would have less need for outcome incentives in the way the water sector finds beneficial to use them.
- One approach is for tiered incentives (which was used for leakage enhancement investment at PR19) – a standard level of P10 range of underperformance for an indicator (as with CRI and supply interruptions), which could vary by scenario or asset management evidence (as with mains repairs).
- The limitations with P10 estimates is they rely on an assumption of normality, which may not apply to individual metrics. There is a risk that systemic risk from weather impacts can apply to a range of metrics, and create a long tail risk.
- Many companies have used Monte Carlo simulation to test the interaction of different ODIs. However, these tools will effectively remain judgements in inputs and how they are used. Ultimately, with no right or wrong answer, we may find that the simplification of defining a set amount of RoRE to put at risk and applying this across a standard range of historic variation for a metric will be just as good as a more complex outcome.
- Below P10 levels of performance, this could either vary by a standard scenario, or be applied to service metrics where the company has a higher historic variation in performance – as an indication of past investment funded by customers.

5. What type of customer research could we use for top down RoRE allocations?

A number of water companies at PR19 researched customer and stakeholder views on incentive packages. We believe this type of research could be used to explore how RoRE ODI underperformance and outperformance values could be translated into the design of outcome incentives.

Generally at PR19 this research was designed and delivered over a short time frame and formed part of both scenario development and acceptability testing in the development of company plans, or in testing whether customer's preferred Ofwat's ODI interventions compared to the incentive package the company had prepared. For instance in the research Bristol Water conducted, customers were found to be indifferent between the two alternative incentive designs, except for a specific view that companies should not be penalised for normal weather variation in mains bursts, and a general distrust of strong per capita consumption targets.

In online research, worst and best incentives and typical range (with target levels equivalent to P10 to P90 levels of service) were used. In deliberative versions of this research, respondents were given information on past and planned performance as well as comparative industry performance, to test whether this made a difference to the incentive packages. In the equivalent national research, the same principle could apply, with greater testing on whether comparative performance, as well as the alternative scenarios for performance changes from current, made a difference to views on how a package of incentives could be allocated. It could also be carried out in the context of long term outcomes, allowing testing customer views on the risk and return challenge that as service levels improve, potentially the outcomes package may skew more towards penalties.

Similar research has also been undertaken concerning the overall size of the incentives package, which could be combined for a larger research study on this basis. However, for this research it may be better to focus on the allocation of a level of incentives equivalent to the PR19 ODI framework, and then once the drivers of incentive views are understood, separately test whether this varies with the risk and return scenarios we describe earlier in this paper.

Range of incentives in annual bill	Penalties	Outperformance payments
Customer experience (customer service)	-£2.00 (-1.3%)	+£2.00 (1.3%)
Unbilled occupied properties	-£1.00 (-0.6%)	+£0.20 (0.1%)
Leakage	-£1.00 (-0.6%)	+£0.50 (0.3%)
Supply Interruptions	-£3.00 (-1.9%)	+£0.50 (0.3%)
Drinking water quality compliance	-£2.50 (-1.6%)	+£0.50 (0.3%)
Mains bursts, unplanned outage at water treatment work, treatment works performance, and low pressure	-£3.00 (-1.9%)	+£0.50 (0.3%)
Network Resilience	-£1.00 (-0.6%)	Zero (0%)
Meter penetration and water consumed per person	-£2.00 (-1.3%)	+£0.50 (0.3%)
Community & Environmental (i.e., local community satisfaction, biodiversity, waste disposal compliance, environmental compliance, untreated water quality in rivers)	-£1.00 (-0.6%)	+£0.50 (0.3%)
Total (Average bill £155)	-£16.50 (11% of the bill) (Typical performance in a bad year)	+£5 (3% of the bill) (Typical performance in a good year)

Range of incentives in annual bill	Penalties	Outperformance payments
Customer experience (customer service)	-£4.00 (-2.6%)	+£4.00 (2.6%)
Unbilled occupied properties	-£3.50 (-2.3%)	+£1.50 (1.0%)
Leakage	-£2.00 (-1.3%)	+£0.50 (0.3%)
Supply Interruptions	-£3.00 (-1.9%)	+£0.50 (0.3%)
Drinking water quality compliance	-£4.00 (-2.6%)	+£0.50 (0.3%)
Mains bursts, unplanned outage at water treatment work, treatment works performance, and low pressure	-£16.50 (-10.6%)	+£0.50 (0.3%)
Network Resilience	-£1.00 (-0.6%)	Zero (0%)
Meter penetration and water consumed per person	-£2.50 (-1.6%)	+£1.50 (1.0%)
Community & Environmental (i.e., local community satisfaction, biodiversity, waste disposal compliance, environmental compliance, untreated water quality in rivers)	-£1.00 (-0.6%)	+£0.50 (0.3%)
Total (Average bill £155)	-£37.50 (24% of the bill) More penalties would occur if there was in severe weather	+£9.50 (6% of the bill) This would occur if Bristol Water is the best in the industry for all measures

A range of water companies have carried out research into incentives. As the case study from Anglian Water below shows, service risk in terms of P10 and P90 ranges can form part of customer research on service levels and incentives.

Case Study

As part of the development of its PR19 business plan, Anglian Water engaged with a representative sample of its customer base to gain top-down insight into customer views regarding incentives. The research has focused on:

- What variability around the bill is preferable to understand views on scale of incentives (i.e. the RORE range)
- The balance of financial incentives between asset health and service-based measures
- The Relative importance and weighting of financial incentives.

This evidence was coupled with performance ranges (P10 & P90) to inform individual caps and collars, as well as to provide an additional source of information for asset health incentive rates. This research demonstrated that it is possible to meaningfully engage with customers on incentives for asset health and that this type of evidence is a useful addition to bottom-up societal valuations.

ICS & Anglian Water, ODI Research Survey, https://www.anglianwater.co.uk/siteassets/household/about-us/pr19-13d-outcome-delivery-incentive-research.pdf

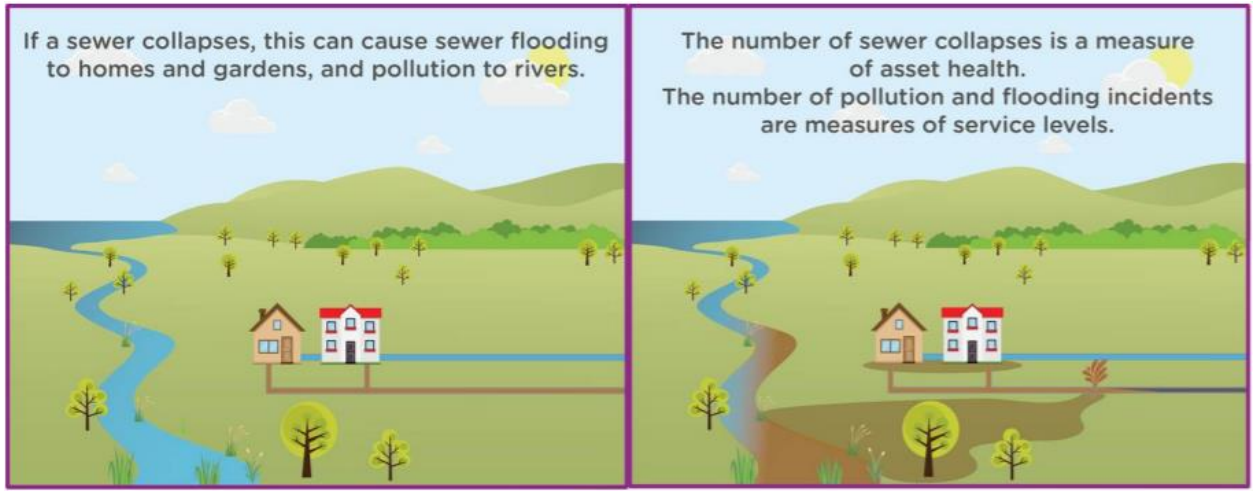
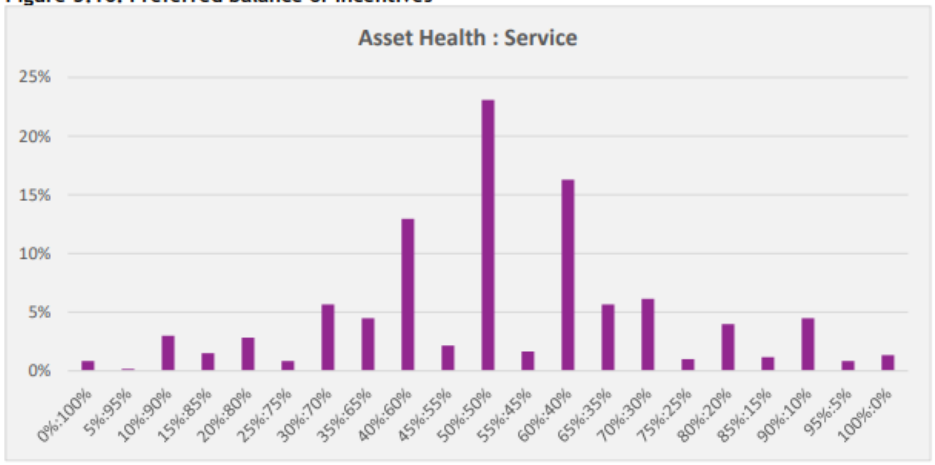


Figure 3.16: Preferred balance of incentives



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