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PR24 Draft Determination: UUW Representation

Area of representation: Economic Insight - Price Control Deliverable report

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This document is an independent report prepared by Economic Insight setting out its view of Price Control Deliverables (PCDs) for PR24. This supports our draft determination response document UUWR_20, section 9.

United Utilities

Water for the North West

Economic Insight

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Economic Insight Ltd

Price Control Deliverables at PR24

Report for United Utilities

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Ofwat has introduced Price Control Deliverables (PCDs) at PR24, intending to ensure "funded" investments are delivered on time. However, these new mechanisms impose costs on companies, by reducing totex efficiency and increasing financing costs. There are limited circumstances where PCDs might be needed to address gaps in Ofwat's existing framework of outcomes and incentives; (i), where investments are driven by statutory requirements which cannot be captured by Performance Commitments and (ii), where the means by which an outcome is delivered is important to customers (because of the unquantifiable 'options' value carried by a particular solution). We set out a decision making framework for assessing how and when PCDs should be applied to each investment scheme. We also set out specific recommendations in relation to the PCD package at PR24, for minimising distortions to incentives and avoiding exposing companies to unreasonable risks.

1 Introduction and Summary

1A. Introduction and context

Ofwat has introduced Price Control Deliverables as a new form of incentive mechanism at PR24. PCDs return allowances to customers in the event that Ofwat considers a 'funded' investment is not delivered, or, in some cases, if it is delivered late.

This report assesses Ofwat's proposals for PCDs in the PR24 Draft Determinations (DDs). We evaluate Ofwat's case for introducing PCDs (in light of other components of the price control framework); set out a framework for how to assess, for any investment, whether applying a PCD is in customers' interests; and finally, we set out potential improvements to the way PCDs have been set and applied in Ofwat's DDs.

1B. Executive summary

PCDs sit alongside other mechanisms with similar or overlapping objectives

Ofwat appears to have two main objectives for PCDs: (i) to incentivise companies to deliver 'funded' investment schemes – i.e. investments for which Ofwat considers it has granted funding; and (ii) to protect customers from paying for investments which Ofwat considers have not been delivered. On the face of it, these are reasonable objectives. However, Ofwat has introduced PCDs in addition to an existing framework of incentives with similar purposes: Ofwat rewards and penalises companies against a suite of 23 Performance Commitments using Outcome Delivery Incentives (ODIs)[1] based on metrics which capture the broad dimensions of water companies' activities and customer experience.

Ofwat wrongly concludes that ODIs provide very limited overlap with PCDs on the basis of a superficial analysis of benefits provided in the very short run. In relying upon this analysis, Ofwat ignores the relationship between investment and ODI payments over the whole lifetime of an investment (something which efficient companies trade-off and evaluate when selecting between solutions). Ofwat also fails to account for the intrinsic network effects of investment in improving, refurbishing and replacing water and wastewater infrastructure assets: while it may be hard to map individual schemes to individual Performance Commitments, this does not mean that these schemes are not contributing to outcomes.

PCDs create new costs for companies and customers

The overlap between ODIs and PCDs risks distorting investment incentives, with companies forced to focus scarce revenues on areas of investment most susceptible to "double penalties". In turn, this will deprive customers of outcomes in other areas of the business.

PCDs also undermine the incentives of Ofwat's totex and outcomes framework. While Ofwat states that it intends PCDs to be measured in terms of outcomes where possible, this objective is rarely applied in practice due to the challenges of measuring delivery of long-term infrastructure investments based on short-term, observable performance. Output-based PCDs deprive companies of the flexibility to optimise investment decisions across different priorities which otherwise allows them to maximise overall cost efficiency (and outcome performance) on a dynamic basis.

PCDs carry significant regulatory burden for both companies and Ofwat – adding complexity to the price control and subsequent reconciliation process – materially reducing the efficiency of the regulatory regime, and introducing the risk that PCDs are mis-calibrated and inadvertently distortionary.

Finally, and most importantly, PCDs risk increasing financing costs: PCDs introduce an asymmetric, downside risk, which compounds the regulatory risk and uncertainty that incentives are mis-calibrated. In its DD, Ofwat wrongly assumes PCD time incentives

[1] *For the three 'Measures of Experience', performance is not incentivised through an Outcome Delivery Incentive but a similar measure where payments are directly based on companies' relative performance.*

offer symmetrical scope for upside and downside, whereas in fact, scope for reward is materially lower than the potential downside risk. Ofwat assumes non-delivery incentives have no impact on risk and return, but as a minimum, PCDs introduce the (one-sided) risk that companies spend allowances on an enhancement project, only for Ofwat to assess that the scheme has not been delivered, and clawing-back an allowance that has been spent.

More broadly, PCDs represent a new, material, and at present, uncertain change to the regulatory system. This makes it harder for investors to appraise risk, acting as a further disincentive for investment into the industry.

Attempts by Ofwat, in its DDs, to address concerns with PCDs and moderate some of their distortionary effects, do not resolve these risks. In fact, the highly complex nature of PCDs, and the numerous 'special cases' Ofwat has introduced, increases the risk that incentives are mis-calibrated – and increases the regulatory burden on both parties.

Ofwat should apply a consistent framework for deciding where to apply PCDs

Despite the potential risks carried by PCDs, in specific circumstances they can play an important role in addressing gaps in Ofwat's existing incentive framework. In particular, this applies where outcomes delivered by the investment are not – and cannot – be captured by Performance Commitments and incentivised by ODIs. These gaps, however, represent an exception amongst investment proposals at PR24, and Ofwat should not apply PCDs uniformly across investment programmes.

We set out a full "decision making framework" in Chapter 4 below which sets out how to evaluate whether to apply a PCD for each investment scheme on a case-by-case basis. In summary, Ofwat should consider the following:

(i) Are the scheme's outcomes captured by Performance Commitments and ODIs (and if not, should they be)?

(ii) Is there reason to believe that the type of solution (i.e. *how* an outcome is delivered) is important to customers, due to the options value of a particular solution, which cannot be captured through ODIs?

(iii) Is there a statutory obligation which requires the scheme to be delivered (even if it does not deliver measurable customer outcomes)?

(iv) Would the incentive benefits of a PCD offset the costs?

On the basis of these four questions, Ofwat can decide whether to introduce a PCD, and whether it should apply in tandem with an ODI and Performance Commitment.

At PR24, Ofwat should moderate the scale and scope of potential PCD penalties

Irrespective of the overall approach that Ofwat adopts for allocating PCDs to investments, Ofwat should reassess the package of PCDs it has introduced at PR24, and adopt a more precautionary approach. Its current proposals expose companies to significant downside risk, and will distort investment decisions, contrary to customers' interests.

Ofwat should consider reducing the scope of PCDs; by focussing them on priority investment areas; by increasing the materiality threshold (in terms of a project's size as a share of totex) above which it considers PCDs should apply; and by removing PCDs for all schemes delivered through base cost allowances – where the risk of both (i) miscalibration of PCDs; and (ii) undermining the established totex-based approach to cost allowances, significantly outweighs any benefits.

Ofwat has limited time and resources to refine its approach to PCDs ahead of Final Determinations. Reducing the scope of PCDs will allow Ofwat to ensure the PCDs which are applied are designed carefully. This results in PCDs that deliver maximum benefits at lowest cost *within* AMP8; and helps ensure that the foundations for this new regulatory mechanism are solid, such that PCDs can be applied 'correctly' in future price controls.

Ofwat should also consider reducing the scale of (potential) PCD penalties; by introducing an aggregate cap on total PCD penalties any company faces; ensuring that time incentive payments are truly symmetrical; and ensuring that companies are able to retain allowances in cases where an alternative scheme is more beneficial than an originally proposed scheme. Ofwat could also address overlap between PCDs and ODIs by reducing ODI penalty rates in cases where the overlap is greatest.

Alongside specific recommendations to refine the design of PCDs, Ofwat should also ensure that it alleviates the regulatory risk carried by PCDs to the extent possible. Therefore, it must provide clarity and full guidance about its approach to 'ex-post' assessment of AMP8 PCDs at PR29, and set out how PCDs will be reconciled in companies' revenues and allowances. In order for companies to properly assess the financial risk that PCDs introduce into the regulatory settlement, this guidance must be provided to companies *prior* to the Final Determinations, or at the very latest, with the Final Determinations.

2 Ofwat's PCD proposals

As a first step in assessing Ofwat's PCD proposals, it is important to understand Ofwat's stated rationale for introducing PCDs and what it intends for them to achieve – in light of the other elements of Ofwat's regulatory framework.

2A. Ofwat's initial objectives and guidance

Ofwat first proposed PCDs in its draft methodology

Ofwat has set out its focus on ensuring companies deliver their enhancement programmes at PR24, in light of the large scale of new investment anticipated, for instance, as a result of new statutory requirements, climate change, and increasing public concern for environmental outcomes.[2]

Specifically, enhancement expenditure is likely to be significantly higher than at previous AMPs – and will account for a larger share of total costs. This is illustrated in Business Plans, where companies predict increases in enhancement costs of 195% on average relative to AMP7, with key drivers including WINEP and Net Zero. As a result, Ofwat considers that the potential consequence to customers from the non-delivery of enhancement programmes is higher in AMP8 than in the past.

Ofwat first introduced proposals for PCDs in its May 2021 framework consultation. While noting that companies' investments are generally linked to outcomes, Ofwat argued there "may still be a need to link funding to specific *outputs*, including for NEP and WINEP commitments, at PR24".[3] At this stage, Ofwat did not set out how PCDs would be defined or calculated, although suggested that penalties would be applied at the end of the regulatory period: "We would then use [PCDs] to review delivery at PR29 and to take action if there is non-delivery".[4]

In its draft methodology, published in July 2022, Ofwat provided further detail on its proposals, setting out that PCDs should build on scheme-specific and output-based Performance Commitments introduced at PR19.[5] Ofwat proposed that PCDs should apply in cases where "the outcome cannot be easily or directly linked to a Performance Commitment" and should allow funding to be returned to customers "where these outcomes or outputs are not delivered".[6] Again, Ofwat provided limited indication as to how it expected PCD penalties would be calculated, but set out an expectation that

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2 *See, for example, Ofwat's draft methodology: "We want to ensure that customers receive the performance and outputs they have funded through enhancement allowances". ('Creating tomorrow, together: Our draft methodology for PR24', Ofwat (2022), p. 115).*
3 *'PR24 and Beyond: Creating tomorrow, together', Ofwat (2021), page 90. Emphasis added.*
4 *'PR24 and Beyond: Creating tomorrow, together', Ofwat (2021), page 90.*
5 *'Creating tomorrow, together: Our draft methodology for PR24', Ofwat (2022), Appendix 9, page 117.*
6 *'Creating tomorrow, together: Our draft methodology for PR24', Ofwat (2022), Appendix 9, page 116.*

companies should set out "milestones" of scheme progress, which would help determine the costs that should be returned to customers "for non-delivery".[7]

Ofwat's revised its proposals in its Final Methodology

Ofwat set out its revised expectations for PCDs in its PR24 Final Methodology, published in December 2022. Ofwat followed this with further guidance in July 2023, which focussed on where PCDs should apply and, for the first time, set out guidance on how PCD "non-delivery" and "late delivery" payments (i.e. in practice, penalties) should be calculated.

Ofwat explained that PCDs are intended to "hold companies to account for the timely delivery of the outcomes and outputs they promise".[8] It also stated that they should apply for all "material" areas of enhancement (later defined as any enhancement schemes worth at least 1% of totex).[9] In contrast to its guidance in the draft methodology which suggested PCDs should be output focussed, Ofwat stated that PCDs should be defined through outcomes "where possible", although argued output measures would be more suitable where outcomes "cannot be easily observed".[10]

2B. Ofwat's Draft Determinations proposals for PCDs

At DD, Ofwat sets out its proposals for how PCDs will be designed and applied. Ofwat's DD approach makes several key changes from its previous proposals.

In most cases, Ofwat has not accepted PCD proposals submitted in company Business Plans. Instead it has set PCDs that are "common across all companies",[11] in terms of (i) investment areas suitable for a PCD; (ii) level of aggregation; and (iii) PCD unit rates (i.e. non-delivery penalty rates). In doing so, it has introduced PCDs in new areas for companies, including for base expenditure. Importantly, whilst setting common PCDs across companies was to some degree expected at the DD stage, extending PCDs to base expenditure was at odds with Ofwat's earlier PCD guidance.

Ofwat intends non-delivery PCDs to return the full amount of funding back to customers in the event that a scheme has not been delivered by the end of AMP8. Non-delivery payments will be calculated as: the number of units not delivered relative to the target at the end of the price control, multiplied by the average unit cost.

Ofwat also stated it will reconcile non-delivery PCDs prior to assessing cost sharing.[12] As a result, we would expect Ofwat to evaluate actual expenditure against totex allowances which are adjusted downwards for any PCD units considered undelivered.

Late delivery penalties will no longer apply for every PCD. Instead, "time incentives" will apply to five categories of enhancement, based on the expenditure areas where spending is "most material, where the timing of delivery is important and where there

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7 *'Creating tomorrow, together: Our draft methodology for PR24', Ofwat (2022), Appendix 9, Box 3.*
8 *'Creating tomorrow, together: Our final methodology for PR24.' Ofwat (December 2022); page 18.*
9 *'IN 23/05 Further guidance on price control deliverables for PR24', Ofwat (2023), page 8.*
10 *'Creating tomorrow, together: Our draft methodology for PR24', Ofwat (2022), Appendix 9, page 119.*
11 *'PR24 draft determinations: Price control deliverables appendix', Ofwat (July 2024), page 7.*
12 *'PR24 draft determinations: Expenditure allowances', Ofwat (July 2024), page 170.*

is no significant overlap with outcome delivery incentives".[13] If companies deliver late against their delivery schedule, they will incur a penalty equal to the WACC *multiplied by* the unit allowance *multiplied by* units delivered late in each year. In doing so, Ofwat aims to "capture the foregone benefits to customers" of late delivery.

Companies can also receive outperformance payments for timely delivery (i.e. delivery in or before the year in which they were due to be delivered), where an outperformance rate equal to ¼ of the underperformance rate is applied to each unit delivered on time. Ofwat states that outperformance rates have been set at this level so that company risk from time incentives is "balanced", and appears to be based on Ofwat's assessment of the ratio of schemes which it expects to be delivered on time, on average.[14]

Ofwat has also introduced several special cases where exceptions to its general approach apply. For example, PR19 carryover schemes will include a "late delivery penalty" applied on a monthly basis, and scheme level enhancement projects will use benchmarking models to determine the PCD non-delivery payment, rather than a consideration of the unit cost.

Ofwat also identified three circumstances where it would consider applying ex-post adjustments to PCDs, which may require a case-by-case assessment of the PCDs in question. These are as follows:

(i) Investment which is slightly late, but on track to be delivered early in PR29. In this case, late delivery payments will apply, for all PCDs;

(ii) Investment which is no longer in the benefit of customers to be delivered. 6% of the allowance can be retained by companies here, if they can "demonstrate that under-delivery is due to an investment no longer being required";[15] and

(iii) Investment for which funding is not accessed through delivery mechanism.

2C. Ofwat acknowledges PCDs interact with other incentives

In its methodology, and its DD proposals. Ofwat recognises that other elements of its price control framework could provide protection to customers from the non-delivery of funded schemes. In particular, Ofwat refers to its outcomes regime, of Outcome Delivery Incentives with associated Performance Commitments (PCs). These are tools which compensate customers when performance falls below a company's agreed targets – known as Performance Commitment Levels (PCLs) – while also incentivising companies to improve performance above their agreed PCL through outperformance payments.

Ofwat argues that in certain circumstances, the delivery of benefits to customers cannot be easily or directly linked, or the costs fully covered, by the existing outcomes framework (and totex incentive mechanism). Ofwat explains:[16]

[13] *'PR24 draft determinations: Expenditure allowances', Ofwat (July 2024), page 166.*
[14] *'PR24 draft determinations: Expenditure allowances', Ofwat (July 2024), page 173.*
[15] *'PR24 draft determinations: Expenditure allowances', Ofwat (July 2024), page 173.*
[16] *'IN 23/05 Further guidance on price control deliverables for PR24', Ofwat (2023), page 3.*

> *"For PR24 we intend to adjust performance commitment levels to reflect the impact of enhancement expenditure. Consequently, if a company does not deliver an enhancement investment on time it can expect to incur outcome delivery incentives underperformance payments. This will help to incentivise water companies to deliver investments on time, and to make the required improvements. However not all enhancements will impact performance commitments and even if performance commitments are impacted, outcome delivery incentives may not cover the total value of the investment."*

In its final methodology, Ofwat set out four examples where it expects that the delivery of enhancement schemes may not be fully protected by Performance Commitments and ODIs:[17]

(i) "Customer benefits of an investment occur after the end of the AMP8 price control";

(ii) "Benefits cannot be directly linked to PCLs";

(iii) "ODI rates are set significantly below costs; or

(iv) "Collars on ODIs mean that investment would not be fully protected".

In the above discussion, Ofwat sets out the need for PCDs to protect customers only in cases where enhancement expenditure cannot be linked to Performance Commitments and ODIs. However, at DDs, Ofwat analyses the overlap between enhancement and Performance Commitments, finding that the "protection" provided by ODIs as a proportion of enhancement expenditure is very low (less than 5%) or zero in the vast majority of investment areas. Ofwat's analysis appears to be based on ODI payments during AMP8, and potentially AMP9. [18]

Based on this, Ofwat concludes that while in theory overlaps are possible between enhancement expenditure and ODIs, these are not material enough to warrant any adjustment to PCD penalties.

[17] *'PR24 final methodology: Appendix 9: setting expenditure allowances', Ofwat (2022), page 119.*
[18] *'PR24 draft determinations : Expenditure allowances', Ofwat (July 2024), pages 167-170.*

3 The role of PCDs at PR24

From Ofwat's methodology and guidance, we understand Ofwat has two main objectives for the introduction of PCDs:[19]

- "*To encourage companies to deliver the funded improvements on a timely manner*"; and
- "*To protect customers from companies failing to deliver these improvements or deliver them late.*"

In this section, we evaluate Ofwat's objectives, in isolation, and in light of the interaction between PCDs and other mechanisms in the price control. We also consider whether PCDs can deliver any other benefits not captured by these two objectives. Finally, we evaluate the costs imposed by PCDs.

3A. The purpose of PCDs in the price control framework

Incentivising companies to deliver funded enhancement projects

We agree that companies should – in general – be incentivised to deliver the enhancement projects in their AMP8 plans. In particular, companies should face the right incentives to deliver the outcomes that would be achieved by an enhancement project, while being afforded the flexibility to deliver these outcomes using alternative models should they be identified. As we discuss in sections below, this flexibility is vital for allowing the totex and outcomes regime to deliver efficiency benefits, since companies face an incentive to employ a more cost-beneficial solution if one can be identified, but also face the downside risk should that solution fail to deliver the same quality of outcome.

Importantly, therefore, there are some cases where it is in customers' interests for companies not to deliver proposed schemes – or deliver them according to a different timetable to that set out in their Business Plans or final AMP8 settlements. Cases where enhancement schemes should not necessarily be delivered as planned include the following:

- Where the cost of achieving an outcome is higher than initially expected, such that the benefits of achieving the desired outcome no longer outweigh its costs, it is not in customers' interests to have it delivered.[20]

[19] *'PR24 draft determinations: Expenditure allowances', Ofwat (July 2024), page 163.*

[20] *Specifically, if the cost borne by customers (after the effect of the Totex Incentive Mechanism, which shares overspend between company and customers) is higher than the present value of the benefits, customers would be worse off if the company were to deliver the scheme regardless.*

- If the company identifies a 'new' solution, or finds the relative costs and benefits of known alternative solutions such that a different solution are now expected to be more cost-beneficial than the originally proposed investment. A specific example would be where an alternative solution is identified which achieves the equivalent outcomes at lower cost – but with a potentially different profile of costs and benefits over the lifetime of the investment.

- When a scheme is no longer needed due to revised or clarified environmental requirements related to a scheme's outputs. Examples include updated evidence on long-term supply-demand balance affecting water resource investments, or revised Environment Agency guidance or expectations concerning wastewater treatment works.

In its DD proposals, Ofwat allows companies to retain 6% of their allowance for undelivered investments if Ofwat finds that it is no longer in customers' interests for companies to deliver an enhancement project, and where the avoided cost exceeds a materiality threshold of 1% of price control totex.[21] Ofwat considers this adjustment removes the perverse incentive facing companies to proceed with an investment should circumstances change. However, Ofwat's adjustment is binary, in that it fails to allow companies to implement alternative delivery schedules or methods which may deliver outcomes more efficiently. Furthermore, retaining 6% of project costs is unlikely to represent an adequate incentive in cases where companies find reasons to change a scheme after significant expenditure has been spent, even if would beneficial for customers to do so.

Protecting customers from non-delivery of enhancement schemes

Ofwat has not defined what it means by "protecting" customers from non-delivery and under-delivery of schemes. Despite this, we agree with Ofwat's principle that customers should not pay the full cost of enhancement schemes where outcomes are not delivered. Similarly, companies should not be able to receive funding from customers for the same investment (or same output) more than once.

However, it is important to recognise that customers' interests are protected, more broadly, by existing components of the regulatory framework which provide the right incentives for companies to make the best effort to deliver efficient outcomes that customers care about – and only recover an efficient level of costs for doing so.

Implications for price setting

If calibrated correctly, PCDs can also play an important role in supporting Ofwat to provide allowances for enhancement projects where there is uncertainty about delivery or need. By providing a mechanism to 'claw-back' allowances from schemes which are not delivered (e.g. because a scheme proves to be unnecessary to meet statutory requirements), Ofwat is able to provide allowances ahead of time while reducing the risk that costs are imposed on customers inefficiently. This is particularly important at

[21] *'PR24 draft determinations: Expenditure allowances', Ofwat (July 2024), page 176.*

PR24 where statutory requirements during AMP8 are not yet finalised ahead of Ofwat's Final Determinations.

Conclusion on the purpose of PCDs

Ofwat's price control framework should achieve the following:

- Incentivise companies to deliver the improvements to outcomes proposed in its enhancement programme, while affording companies with the flexibility to use alternative solutions where they arise, so long as enhancement expenditure remains in customers long-term interests;
- Protect customers from overpaying or paying twice for enhancement schemes/their outcomes; and
- Support Ofwat to set enhancement allowances when there is uncertainty over future requirements.

Crucially, these objectives must be achieved by the price control framework in aggregate, rather than the sole responsibility of PCDs. PCDs should therefore be targeted at any gaps in the current framework. This is explored in more detail in the following section.

3B. The role of PCDs in addressing gaps in the current framework

Existing mechanisms also incentivise delivery and protect customers

PCDs are not applied in a vacuum, and will exist alongside other incentive mechanisms with complementary objectives and potentially similar implications for companies, in the event that a scheme is undelivered, or delivered late.

The outcomes framework

Under current arrangements, the main tool Ofwat has relied upon to deliver on its objectives for PCDs is the outcomes framework. Since PR14, Ofwat has transitioned to a framework focussed on outcomes experienced by customers and society – rather than the previous regime focussed on inputs used and outputs delivered. Alongside specific incentives around measures of outcomes, Ofwat standardised the regulatory treatment of opex and capex, setting the price control on a *totex* basis – encouraging companies to innovate by developing and employing novel approaches to deliver outcomes. This also removed any incentive for companies to favour capex-intensive solutions over opex-based methods of meeting customer expectations. Importantly, Ofwat's framework of outcomes is intended to incentivise companies focus on the delivery of outcomes across both base and enhancement expenditure – without a distinction between investment to maintain performance, and investment to improve performance.

Ofwat has retained this framework at PR24, although it has made specific adjustments to how performance is measured and how incentive rates are set, as we discuss below.

ODIs and Performance Commitments

In practical terms, the outcomes framework consists of Outcome Delivery Incentives and associated Performance Commitments, as explained in section 2C. The scope of Ofwat's suite of Performance Commitments has changed from price control to price control, but at PR24, it consists of a package of 25 common Performance Commitments, and up to 3 'bespoke' Performance Commitments which apply to individual companies. Ofwat's suite of Performance Commitments is intended to capture the key outcomes of importance to customers which are suitable for financial incentives, including: leakage, storm overflows, supply interruptions, and pollution incidents.

At PR24, ODI payments are, in theory, based on the marginal benefit to customers from under (or over) delivery of a particular outcome. However, in practice, Ofwat has calculated ODI rates based on a top-down consideration of equity return at risk,[22] using customer valuations only to set the relative strength of ODI rates for different Performance Commitments, rather than to set the rates themselves. Ofwat adopts this approach on the grounds of the difficulty of reliably mapping survey data to customer marginal benefits.[23]

Ofwat sets PCLs in light of the enhancements that companies are expected to deliver over the course of the price control – with targets generally tightening as the price control progresses. Furthermore, Ofwat tends to take account of comparative performance between companies when setting PCLs. This means that the targets for a company increase as other companies' performance improve.[24]

Therefore the outcomes framework incentivises companies to deliver the programmes set out in their Final Determination, since not doing so increases the likelihood of incurring ODI penalties – now and in the future. Simultaneously, ODIs also provide protection for customers should outturn performance not equal the level that customers have funded.

Totex incentive

The totex incentive mechanism shares aggregate under- and over- spending relative to a company's allowance between the company and customers. Ofwat proposes to vary the rate of cost sharing between companies and for different categories of cost at PR24, but most expenditure subject to PCDs is classified as enhancement, and is therefore subject to a cost sharing rate of 40%.[25]

Cost sharing has two implications for Ofwat's PCD objectives:

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22 *'PR24 draft determinations: Delivering outcomes for customers and the environment', Ofwat (July 2024), page 18.*

23 *'PR24: Using collaborative customer research to set outcome delivery incentive rates', Ofwat (August 2023), page 2.*

24 *For example, at PR24, it has indicated it will set most common performance targets based on the upper quartile performance.*

25 *'PR24 draft determinations: Quality and ambition assessment summary', Ofwat (July 2024), page 2.*

- First, cost sharing automatically returns at least half of funding to customers when the allowance for an enhancement project is not spent – providing significant protection to customers from paying for under-delivery.

- Second, cost sharing works with the outcomes regime to reduce any incentive that may exist for a company to choose not to deliver long-term investments. Since companies must return funding to customers today if an enhancement is not delivered, but will still face tighter PCLs in the future, any short-term financial gain from non-delivery would be eroded by ODI penalties incurred over time.

However, cost sharing is blind to whether an enhancement is actually delivered, so will not always provide protection to customers in the event of non-delivery. This may be the case when (i) the enhancement allowance is spent elsewhere by the company (provided that spending would not have occurred here if this allowance was not available); or (ii) the enhancement allowance is spent in the 'correct' place, but the paid-for outcome/output does not materialise, e.g. due to deliverability issues. Therefore, the extent to which cost sharing provides protection depends on the *reasons* for under-delivery.

Non-price control incentives

Alongside the regulatory incentives set out above, firms also face further incentives to deliver outputs on time.

Where a capital project overruns, the company will often face additional costs, which would have been avoided if the scheme were delivered on time. Avoiding costs associated with overruns will incentivise the company to make its best effort to (economically) deliver an enhancement project on time.

Second, Ofwat's enforcement regime provides an effective incentive on companies to make their best effort to deliver outcomes where they are associated with the requirements in their licence – and gives Ofwat a mechanism to protect customers in the event of non-delivery, even when an output or outcome is not protected by ODIs. For instance, Ofwat penalised Thames Water in 2018 when its leakage performance fell significantly below the range of automatic penalties that could be incurred through the ODI mechanism.[26] More recently, it has fined three companies for "excessive spills from storm overflows", resulting from the mismanagement of wastewater treatment works.[27] This is in addition to any ODI penalties incurred by failure to meet Performance Commitments on storm overflows. Importantly, these penalties were delivered after an investigation into the cause of companies' failures – rather than applied mechanistically based on measured outcomes.

[26] *'Notice of Ofwat's proposal to impose a penalty on Thames Water Utilities Limited', Ofwat (June 2018).*
[27] *'Enforcement case in Thames Water's/Yorkshire Water's/Northumbrian Water's management of its sewage treatment works and sewerage networks', Ofwat (August 2024).*

Where existing mechanisms leave a gap in the regulatory framework

The outcomes regime works to incentivise companies to deliver outcomes set out in their Business Plan, including enhancement programmes, and protects customers from undelivered benefits. In addition, the totex incentive and enforcement regime support both objectives by reducing any incentive to "game" the system of incentives. In light of these, we consider cases where existing mechanisms continue to leave a gap that PCDs *could* address:

- **Case 1: Enhancement projects not captured by Performance Commitments**

  Most investments delivered by water companies improve attributes of quality and service measured by Ofwat's suite of ODIs and Performance Commitments, since Performance Commitments are designed to capture the "key outcomes of importance to customers", both now and in the future,[28] and expenditure allowances are set so that companies can "deliver outcomes that matter to customers".[29]

  In principle, there may be a case for a PCD if one thinks an enhancement spend area drives an outcome not covered by a Performance Commitment. This is because companies would face limited financial consequences for non-delivery. In its DD, Ofwat states that ODIs provide "a very low level of protection" for most enhancement spend areas,[30] suggesting that the presence of ODIs and Performance Commitments does not provide sufficient incentive to deliver enhancements.

  However, in a network industry, it can be hard to map individual schemes to individual outcomes, but this does not mean that these schemes are not contributing to outcomes. Rather, all investment should contribute somewhat to outcomes, either in the short run or over a longer time horizon (indeed, why perform the investment otherwise). Therefore, Ofwat's *short run* analysis of existing ODI protection might not be sufficient to conclude that the suite of Performance Commitments provide insufficient protection. Given the wide scope of outcomes covered by the existing framework, in most instances it seems likely that the outcomes regime does provide some customer protection and incentives for companies to deliver.

  Despite this, it may still be possible to identify rare schemes that drive an outcome not covered by the existing outcomes framework, if said outcome is not measurable, or not included in Ofwat's suite of Performance Commitments. An example is investment in infrastructure needed to comply with certain statutory requirements. One such example would be WINEP investment to install water flow meters. In some of these cases, the nature of statutory

[28] *'PR24 Final Methodology: Appendix 7: Performance commitments', Ofwat (December 2022), page 4.*
[29] *'PR24 Final Methodology: Appendix 9: Setting expenditure allowances', Ofwat (December 2022), page 3.*
[30] *'PR24 draft determinations: Expenditure allowances', Ofwat (July 2024), page 167.*

requirements facing water companies provides little scope to deviate from a specific output, meaning that outcome measures fail to capture compliance with the requirement.

- **Case 2: Enhancement projects with future 'options' value**

  Many capital enhancement projects deliver outcomes beyond the current price control. Therefore any non- or late delivery beyond the price control will not be captured by ODI penalties within the current price control. However, provided that the ODI regime is stable between price controls, future PCLs and resulting ODI penalties will reflect any under-delivery of enhancement schemes in previous price controls, so long as they are set according to a baseline which reflects funded improvements in the previous price control. This is the case at PR24, where the starting point for PR24 PCLs is set at the PCL for the final year of PR19, with exceptions only where Ofwat does not consider this representative of current performance.

  Therefore, Ofwat's assertion that there is no material overlap between ODIs/Performance Commitments and PCDs (based on a short-term analysis of the effects of enhancement spend)[31] is incorrect, as it fails to consider the impact that enhancement spend has on ODI penalties and rewards in future price controls. If companies have sufficient faith in the long-term stability of the outcomes regime, and a sufficiently long time horizon, companies will still invest in enhancement projects that deliver outcomes beyond the current price control, in order to maximise their expected (discounted) net ODI rewards over time.

  However, a specific challenge when commissioning capex schemes which deliver outcomes in the long-term is that the *options* value of one investment over another is difficult to quantify and hard to reflect in outcome-focussed incentive mechanisms. If, by pursuing a permanent capex solution, additional (unquantified) benefits are incurred in the future, then customers risk being worse-off if the company uses its allowance to deliver an opex-based solution instead. In such a scenario, Ofwat may consider that an output-focussed PCD is appropriate for ensuring there is an incentive on the company to deliver the additional, future benefits – or, if they are not delivered, that customers do not fund them.[32]

  One such example is capital investment in mains replacement: there is a trade-off between addressing leakage with opex solutions (e.g. enhanced pressure management), compared to more capital-intensive solutions such as mains replacement, which can achieve a permanent reduction in a pipe's tendency to leak. The permanency-benefits of the capital investment are hard to capture compared to the in-year benefits delivered by an opex solution. Conversely, opex-focussed investment carries an options benefit in terms of future

[31] *Please see: 'PR24 draft determination: Expenditure allowances', Ofwat (July 2024), page 168.*

[32] *Note that risk sharing mechanisms, particularly the totex cost sharing mechanism, which insulate share the costs and benefits of overspending and underspending between companies and customers should continue to apply in these cases.*

uncertainty – if another technological solution is identified in the future (which can reduce leakage at lower cost than today), then costs would be avoided in the long-term if the opex solution is chosen today.

- **Case 3: ODI rates do not reflect marginal benefits in full**

  Customers will not be compensated if ODI rates or conditions do not capture the missed benefits from non- or under-delivery. Specific examples where this may arise include the following:

  (i) Collars which restrict ODI penalties below a certain level;

  (ii) Deadbands which mean ODI payments do not apply to a range of performance near to the target; and

  (iii) ODI rates which are not set in line with marginal benefits or marginal costs.

  In these examples, there is a theoretical case for PCDs to protect customers from non-delivery. However, in practice, the conditions which would have led ODIs to be designed in this way would also make it difficult for Ofwat or companies to rely on estimates of missed benefit. For instance, Ofwat generally applies collars if either: (i) performance risks being affected by exogenous factors outside companies' control (e.g. supply interruptions can be influenced by weather); or (ii) Performance Commitments are new or bespoke at PR24, so there is a high degree of uncertainty over the 'correct' PCL and ODI rate. Ofwat intends to set ODI rates in line with marginal costs and benefits, meaning that any discrepancy compared to actual costs and benefits is only 'revealed' after incentives have been set.

  As such, applying PCDs penalties in these scenarios would carry significant risk of distortion of incentives, and miscalibration of the balance of risks – and undermine the ODIs which Ofwat has designed for these outcomes. Put differently, if Ofwat considers marginal benefit estimates are insufficiently robust to calculate ODI payments, it follows that the same estimates are not suitable for PCD payments.

Importantly, in each of these scenarios set out above, the gap in incentives and customer protection which remains after existing mechanisms are applied is different. This means that Ofwat (and companies) will need to adopt bespoke and non-mechanistic approaches to setting and applying PCD payments (or indeed, other alternative solutions to these gaps), as we discuss in the sections below.

Conclusion on where PCDs can fill a gap in Ofwat's regulatory regime

Ofwat's overall objectives for PCDs in terms of incentivising delivery and protecting customers are, in general, delivered by other elements of its outcomes-focussed and totex-based regulatory framework, in particular, through its suite of Performance Commitments and ODIs.

Therefore, there may be a role in the following cases:

- Cases where the benefits of a scheme are not captured by Performance Commitments, and are not appropriate to be captured by a Performance Commitment, either now or in future price controls (e.g. for a statutory requirement).
- Cases where a proposed scheme delivers additional optionality benefits in the future which cannot be captured by Performance Commitments – and where the scale of these benefits outweighs the cost in terms of lost flexibility to deliver the core benefits via an alternative investment – in effect, cases where Ofwat intends to specify the means by which an outcome is delivered.

3C. The costs associated with PCDs

The section above explains the role PCDs can play in addressing gaps in the incentive framework. Notwithstanding that PCDs should be targeted to best address these gaps without undermining other incentive mechanisms in the price control, it is also important that Ofwat considers the potential adverse effects of PCDs.

Introducing PCDs into the price control framework can result in unintended consequences, which offset some or all of the benefits of PCDs. There are three key costs to customers that PCDs can increase, which need to be considered:

- higher financing costs;
- higher (and inefficient) totex; and
- higher administrative or regulatory burden.

Ofwat's PCD design impacts the associated cost

The extent to which these costs are present in a PCD framework depends on how PCDs are designed. We outline how Ofwat's proposed PCD design, as it stands, leads to high associated costs in this chapter, before explaining each cost in turn.

The magnitude of PCD payments

Ofwat suggests that all enhancement investments greater than 1% of relevant totex should have a PCD attached.[33] Given this, it expects that 60-80% of total enhancement spend for each company will be covered by PCDs.[34] Enhancement spend at PR24 is expected to be far larger than the equivalent spend in previous price controls, with Ofwat predicting that enhancement spend will be two to three times greater than allowed at PR19 for each company.[35] Therefore, under Ofwat's methodology, a significant proportion of totex will be covered by PCDs.

[33] *'IN 23/05 Further guidance on price control deliverables for PR24', Ofwat (2023), page 2.*
[34] *'IN 23/05 Further guidance on price control deliverables for PR24', Ofwat (2023), page 12.*
[35] *'IN 23/05 Further guidance on price control deliverables for PR24', Ofwat (2023), page 12.*

Additionally, in its further guidance, Ofwat suggests that when companies fail to deliver funded outcomes or outputs, they should "return the funding to customers through price control deliverable payments" and that when combined with other incentive mechanisms, they should "return to customers more than the allowed cost of the enhancement".[36] This implies that the amount of money returned to customers in the case of non-delivery could be very large, and exceed the magnitude of the totex covered by PCDs. Since we have established that PCDs cover a significant proportion of totex, the potential size of PCD *payments* may be correspondingly large, magnifying any potential costs of implementing PCDs.

As a result, the potential size of payments to customers from PCDs under a P10 (i.e. one in ten year worst case) scenario is likely to be far larger than the equivalent payments associated with the scheme-specific (bespoke) ODIs used at PR19, once risk mitigation measures from PR19, such as collars are considered. This explicitly increases the (asymmetric) risk associated with PCDs.

The asymmetric nature of PCD payments

In its DDs, Ofwat has set time incentive payments to be two-sided, arguing these create a balanced risk for companies from this incentive. However, time incentive payments only apply to six PCDs; non-delivery payments – which apply to all PCDs – are penalty only, with no possibility of outperformance.

Ofwat does not consider that asymmetric non-delivery payments are a risk for companies. However, this assertion fails to consider: (i) that companies might incur significant costs attempting to deliver, without meeting delivery targets; or (ii) that the amount returned to customers in the case of non-delivery will be far larger than the amount returned at PR19 (through cost sharing and bespoke ODIs). Therefore, since Ofwat asserts that risk ranges were symmetrical at PR19, this change will necessarily result in a more negatively skewed risk range than before, provided there are no offsetting positively skewed risk areas.

The complexity and uncertainty of PCD payments

Ofwat's suite of PCDs are still subject to considerable uncertainty, with key details missing from Ofwat PCD methodology in its DDs. For example, the interaction between PCDs and other mechanisms, such as the Delayed Delivery Cashflow Mechanism (DDCM) is unclear; and the nature of PCD adjustments to the revenues and RCVs of companies are not clear at present. This uncertainty in mechanism design increases the uncertainty around expected company performance, which could act as a further deterrent to investors.

Additionally, there are multiple exceptions and special cases in the design of PCDs, which adds considerable complexity to the regulatory framework. For example, PR19 carryover schemes, schemes associated with investments that are "no longer required", and "scheme level" PCDs each have PCD-specific mechanisms for calculating non-/late delivery payments. Not only does this complexity make it more difficult for companies and investors to forecast performance, but this also increases the risk that some PCD

[36] *'IN 23/05 Further guidance on price control deliverables for PR24', Ofwat (2023), page 8.*

incentives are mis-calibrated, which could have a distortive effect on company behaviour.

Specific costs of PCDs

Higher financing costs

The financing costs of a firm depend on both its expected return, and the level of risk associated with this return. The introduction of PCDs both lowers the expected return, and increases the level of risk associated with the expected return (i.e. the risk premium), which can raise financing costs:

- Large, highly asymmetric PCD incentives lower the expected return for a company. Therefore, the expected outcome for a company (if not in a single year, then at least in the long run) is to incur net PCD penalties. The proposed two-sided (but asymmetric) time incentive payments for six PCDs do not alleviate this risk.

- PCDs introduce an additional source of (downside only) risk to the returns of a company, since PCDs impose an uncertain but potentially large penalty on companies, which is not recoverable from customer bills.

PCDs therefore lower the attractiveness of water/wastewater companies as an investment. This is exacerbated by the reduction in efficiency that PCDs can cause, explained in more detail below, which reduces the expected return (or increases the expected loss) companies can make from underspending (overspending) against totex allowances. In order to raise sufficient capital to fund its activities in the context of PCDs, companies may need to increase the return offered to investors, resulting in a higher cost of capital.

Ofwat sets an allowed return on capital for companies based on their estimated cost of capital, which can be recovered through customer bills. An increase in the cost of capital can therefore result in higher customer bills. This could partially, or fully, offset any customer benefits from PCDs that occur from incentivising companies and providing customer protection.

More broadly, introducing PCDs into the price control framework is a material change to the regulatory system, which could affect investor risk, particularly in the context of investors recovering said investment over multiple AMPs. Such material changes make it harder for investors to appraise risk, because the regulatory regime is less stable and predictable. As a result, investors might require a higher return on investment to ensure companies remain an attractive investment proposition, which in turn requires a higher cost of capital and ultimately, higher customer bills.

Higher (and inefficient) totex

The existing totex regime allows companies the flexibility to deliver outcomes using the method they see fit, for instance, by reducing leakage through either replacing pipes or installing valves to enable better pressure management. Companies also have flexibility over the delivery schedule of outputs, which allows companies to deliver specified outcomes when they see fit (although noting that associated ODI penalties and

rewards provide an incentive to deliver sooner rather than later). Such flexibility allows companies to deliver outcomes for consumers more efficiently by:

- **Using the most efficient delivery method**; since companies have the flexibility to identify the lowest cost solution to deliver outcomes customers care about, or develop new, innovative solutions, which may not be apparent at the time of setting the price control.
- **Delivering at the most efficient time**; since companies can make sensible trade-offs over the delivery schedule based on external factors, e.g. a temporary cost shock, or the availability of specialist resources / components required for a capex project. This serves to lower the deliverability risk of enhancement projects.
- **Reprioritising enhancement schemes** during price control periods; since it may be that a company can achieve better overall outcomes for customers at a lower cost by not delivering a particular output, and spending the money elsewhere.

In the absence of PCDs, companies also have the *incentive* to deliver enhancement projects efficiently and find innovative solutions, since they receive a share of the benefits of such solutions through the totex incentive mechanism and ODI outperformance payments.

The introduction of PCDs can limit this flexibility, binding companies to delivering certain outputs/outcomes at pre-determined milestones based on pre-determined spending programmes. This reduces the ability for companies to make sensible trade-offs, lowering allocative efficiency, and removes the incentive for companies to find more innovative solutions to deliver outcomes for customers.

Ofwat recognised the efficiencies that come from a flexible totex and outcomes regime in the past, and used the introduction of this regime at PR14 to justify a 'high' frontier shift at PR19.[37] In doing so, Ofwat cited evidence that the move to a totex and outcomes regime resulted in a 0.5% efficiency improvement per year over PR14.[38] Reducing opportunities for companies to access this efficiency gain (and going further to actively prevent companies from pursuing alternative solutions), may deprive customers of this productivity improvement and increase bills in the long-run.

Higher regulatory burden

PCDs are likely to add an administrative burden on both companies and Ofwat. Companies will be expected to track performance on their PCDs, which may require new monitoring equipment and/or administrative expense. Similarly, Ofwat will have to monitor companies and assess what payments are required at the end of the price control period. Given the wide coverage of PCDs proposed by Ofwat – it expects 60-80% of enhancement to be covered by PCDs – this could result in a meaningful increase in monitoring expense for Ofwat, companies and all stakeholders.

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[37] *Specifically, Ofwat set a frontier shift target based on the 'upper end' of the frontier shift range calculated by Ofwat's consultants.*
'PR19 final determinations: Securing cost efficiency technical appendix', Ofwat (Dec 2019), page 177.

[38] *'PR19 final determinations: Securing cost efficiency technical appendix', Ofwat (Dec 2019), page 177.*

In addition, Ofwat cannot expect all PCD payments to be triggered automatically, with evidence submissions a part of Ofwat's existing PCD design, e.g. to prove that non-delivered outputs at the end of the AMP are actually late and on track to be delivered early next period. In Chapter 4, we also highlight the need for a case-by-case application of PCDs given the bespoke nature of PCD costs and benefits for a given enhancement area. Therefore, significant amounts of evidence will have to be both prepared by companies and considered by Ofwat. This incurs expenses for both Ofwat and the company in terms of the administrative cost of doing so, and in terms of the opportunity cost of alternative, potentially more productive, activities that could be carried out.

4 A framework for applying PCDs

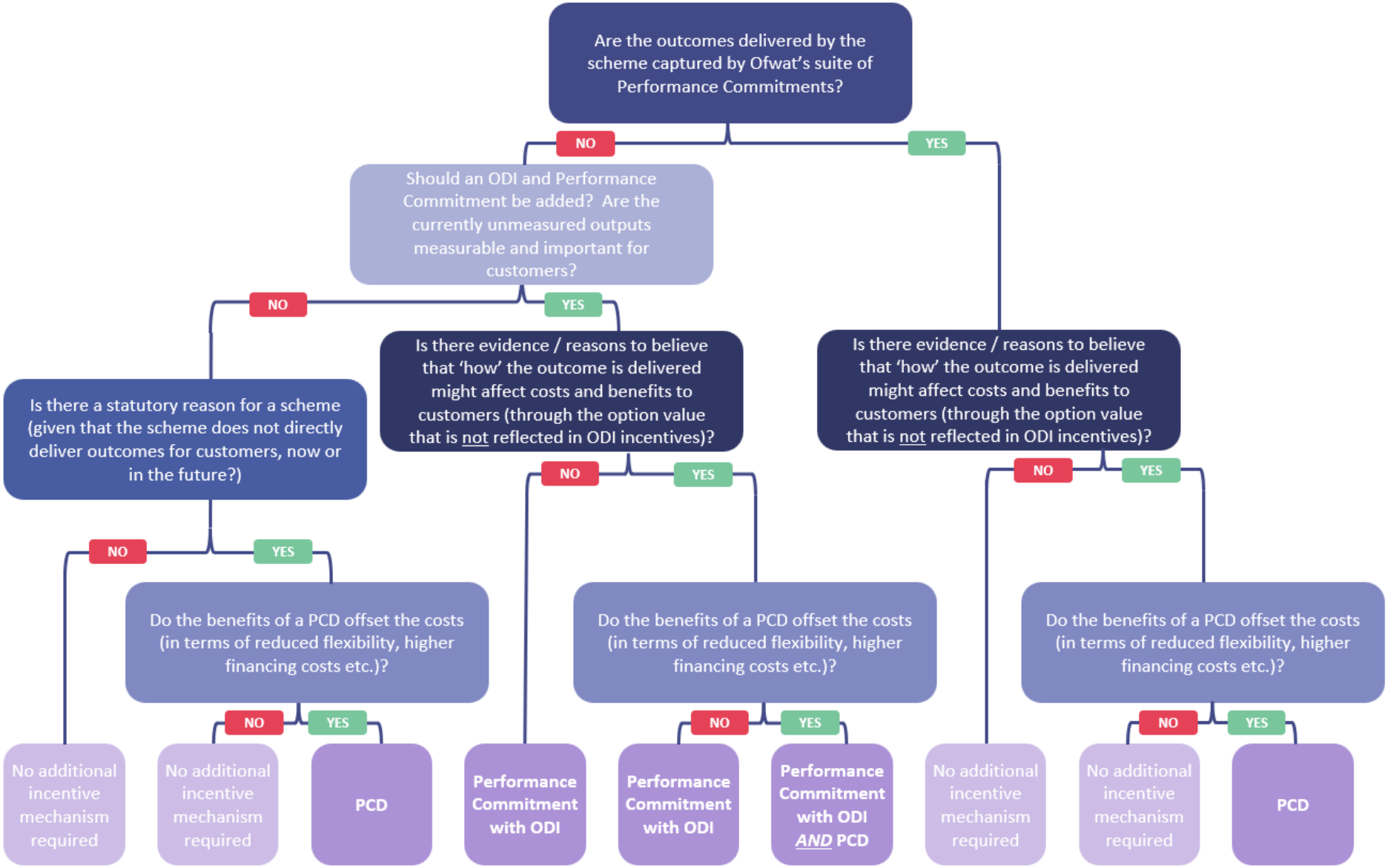
This chapter sets out a framework for how one should decide whether to apply PCDs, based on economic and regulatory principles. In doing so, we consider the role a PCD can play in light of the gaps left by other mechanisms, and the potential costs of imposing PCDs on companies and customers.

4A. PCD decision making framework

PCDs could play a role in addressing gaps in Ofwat's incentive framework. However, the benefits of a PCD, and the costs it might impose on company and customer, vary on a case-by-case basis. Therefore, PCDs should not apply as a default to all investment programmes – but nor should they be applied on an ad-hoc basis.

Therefore, we have constructed a decision making framework which can be used to identify, for each potential investment: (i) whether there is an existing gap in the framework; and (ii) whether a PCD is an appropriate solution to improve customer welfare, when there is a gap. This framework brings together the findings in Chapter 3 above, and is show in the diagram below:

Figure 1: A decision making framework for when to apply a PCD



4B. Applying the framework in practice

An important step in applying our framework is evaluating whether the benefits of a PCD outweigh the costs associated with them. Chapter 3 establishes three costs associated with implementing PCDs: (i) higher totex; (ii) higher financing costs; and (iii) higher regulatory burden. These costs are likely to be the highest in the following circumstances:

- when spending is on newer areas, where optimal delivery mechanisms are not yet known;
- when spending is on large enhancement projects; and
- when spending is on areas where it is difficult to monitor or appraise performance.

The rest of this section discusses these three circumstances in turn.

Spending on new areas with unknown optimal delivery mechanisms

A key drawback of PCDs is that they may constrain companies to a pre-agreed delivery schedule, rather than allowing companies to innovate and deliver outputs/outcomes in the most efficient way as is apparent during the price control. For well-established spend areas with lower scope for innovation and clear optimal delivery methods (e.g. lead pipe replacement), a PCD is less likely to constrain companies' ability to optimise and is therefore unlikely to result in additional or inefficient costs. However, we do not know the optimal delivery method or schedule for newer or evolving investment areas, such as for IED compliance, and there may be opportunities for companies to deliver innovative solutions. As a result, there is a high risk that an inflexible PCD constrains companies to an inefficient delivery schedule or method, given the high uncertainty surrounding these spend areas. Therefore, delivery uncertainty is an important driver of the potential costs of a PCD.

This problem could potentially be solved through specifying a PCD in terms of outcomes rather than outputs, but as explained in Chapter 3, this is not always desirable. This is because in many circumstances, Ofwat cares about the process by which improvements are delivered rather than only the (short-term) measurable outcomes. In fact, if this is not the case, then a Performance Commitment and associated ODI might be a more effective solution to a gap in the price control framework.

Spending on large enhancement projects

The size of the enhancement project has an impact on the extent of costs incurred. Large investments expose companies to large PCD penalties relative to totex allowances – and have the potential to be a significant source of downside risk for companies, with a correspondingly large increase in financing costs and customer bills. Furthermore, the larger the enhancement project, the higher the potential for PCDs to result in

wasteful totex, if the PCD constrains companies to an inefficient delivery method or delivery schedule.

However, the cost in terms of regulatory burden is likely to be disproportionate when projects are small, since the burden is unlikely to increase proportionally with the size of the enhancement spend. As such, the overall effect of the size of enhancement projects on the costs of a PCD is ambiguous, but remains an important consideration for whether it is optimal to apply a PCD.

Spending on areas where it is difficult to monitor or appraise performance

Some enhancement areas might require new monitoring equipment, personnel, or monitoring processes, in order for companies to be able to effectively report their progress against PCD targets. For example, in order to demonstrate delivery of its proposed modelled storm overflows PCD, United Utilities proposed to submit internally assured evidence packs and obtain certification from the EA.[39] Consequently, the regulatory burden imposed by PCDs will be high in such scenarios.

For other spend areas, even if outcomes/outputs are easy to monitor, it may be difficult to monitor outcomes/outputs *relative* to allowances, in cases where there is no specific 'allowance' to compare to. Ofwat has not given an indication of how PCD targets will be set when this is the case. For example, outcomes/outputs funded from base expenditure (e.g. mains renewals) are calculated through top-down modelling of historical costs. This means that there is not an explicit allowance per-unit of mains renewed, increasing the likelihood that the PCD penalty rate would be mis-specified and result in mis-calibrated incentives.

[39] *'United Utilities Business Plan, Chapter 8: supplementary document: Wastewater (Quality – Overflows) Enhancement Case', United Utilities (October 2023), page 90.*

5 Implementing PCDs at PR24

As we established in the sections above, there may be incentive gaps in the price control framework, which justify in some (limited circumstances) the introduction of PCD-style mechanisms. These arise when either (i) there are reasons to consider a particular solution will achieve greater benefits for customers over the long-term, due to the unquantified options value of an investment; or (ii) when enhancement schemes relate to statutory requirements that are not related to outcomes, which can be measured by Performance Commitments. There is, therefore, a rationale for PCDs at PR24, provided that they are implemented effectively, and applied in a way which minimises potential adverse consequences for company incentives and consumer costs.

A 'first best' solution to this issue would be to assess whether enhancement schemes require a PCD on a case-by-case basis, such that only PCDs that have a net positive contribution to customer welfare are introduced. Using our decision making framework (discussed in Chapter 4) would ensure PCDs are applied in a targeted way and minimise potential adverse impacts.

In any event, there are a number of 'top-down' considerations that Ofwat could take to de-risk PCDs, reduce their distortionary impact and adopt a more precautionary approach to rolling out this new set of incentives. These changes can be implemented regardless of whether the decision making framework in Chapter 4 is applied, and do not require large scale changes to Ofwat's PCD methodology. In particular, Ofwat could:

(i) Reduce the scope of PCDs; and

(ii) Adjust how incentive rates (penalties) are calculated.

These measures can reduce the risk that improperly calibrated PCDs can have on both customers and companies, while still maintaining customer protection and the incentive properties that Ofwat wishes to retain.

Alongside these specific recommendations, Ofwat should also alleviate the regulatory risk carried by PCDs by consulting properly on how PCD payments will be implemented and how Ofwat will make its ex-post assessment of PCD performance and delivery. Ofwat should set out how PCD payments will be reconciled in companies' revenues and allowances at the end of AMP8, and provide detailed guidance on how it will carry out its 'ex-post' assessment of AMP8 PCDs at PR29, for instance, to assess schemes which will be delivered late (but early in the next AMP) and in cases where it is in customers' interests not to deliver a scheme.

5A. Reducing the scope of PCDs

The greater the size of the overall PCD package, the greater the potential costs, e.g. in terms of financing, inefficient totex and regulatory burden. The most effective way to reduce the scope of PCDs to the benefit of customers is to remove PCDs that are most likely to have costs that exceed benefits.

Focussing PCDs on a narrower set of investments

In its DDs, Ofwat applies PCDs to a wide range of investments. To address specific distortions and risks it has then adjusted its PCD design for different cost categories. This ad-hoc design approach creates complexity and increases the risk of the regulatory framework being mis-calibrated.

When Ofwat introduced ODIs to the regulatory framework at PR14, it did so in cautious way, before expanding them more widely over subsequent price controls as it developed the regime and established standards for setting, measuring and applying incentives to outputs. A similar, precautionary approach would be appropriate for PCDs.

Since PCDs are a new mechanism at PR24 – Ofwat would benefit from applying them sparingly, targeted at the investment areas where they have the potential to have the biggest impact (in terms of addressing gaps in the current incentive framework). Ofwat has limited time and resources to refine its approach to PCDs ahead of Final Determinations. Therefore, reducing the scope of PCDs will allow Ofwat to ensure that PCDs which are applied are designed and set carefully, so as to deliver maximum benefits at lowest cost.

Increasing the materiality threshold

In its DDs, Ofwat maintains that PCDs should be applied to all enhancement schemes with expenditure greater than 1% of (relevant) totex, at a minimum. However, this uniform approach ignores how the magnitude of costs associated with PCDs, e.g. in relation to high financing costs and inefficient totex, might change depending on the scheme in question, nor does it reflect that PCDs only play a role where other incentive mechanisms are lacking.

PCDs attached to small enhancement areas may have small benefits to customers, given the limited impact that these enhancement areas have on customer outcomes and bills. However, the regulatory burden associated with PCDs might not increase significantly with the size of investment.

Ofwat does not explain its choice of materiality threshold, above which all enhancement schemes carry a PCD. While it is difficult to define a 'better' materiality threshold, a significantly higher threshold would remove PCDs that are most likely to have a net harm to consumers.

Removal from base costs

In its DDs, Ofwat introduced PCDs attached to base expenditure for mains renewals, water softening, and network reinforcement.[40] Base PCDs are particularly likely to have costs that are greater than benefits – therefore we recommend Ofwat removes PCDs from these investments.

Investments funded through base expenditure do not have specific allowances associated with them – instead allowances are calculated through top-down modelling of historical costs. Therefore, it is more difficult for Ofwat to estimate the 'correct' level of allowance associated with base PCDs, increasing the chance that incentives for late- and non-delivery are mis-calibrated.

Furthermore, base expenditure has particularly strong links to the broader outcomes regime, since it represents, by definition, expenditure required for the normal operation of the business. Expenditure on mains replacement, for instance, addresses a wide range of outcomes associated with ODIs, including burst mains, leakage, water supply interruptions, as well as measures related to customer experience of water quality (e.g. CRI and customer contacts) and the broader customer measure of experience (C-MeX). This high degree of overlap reinforces the risk of mis-calibrated incentives, and suggests there is limited justification for additional mechanisms due to gaps in the existing framework.

5B. Changing how PCD payments are set

Changing how PCD penalties are calculated and set can reduce companies' exposure to downside risk, and avoid distorting incentives.

Introducing an aggregate cap and collar on PCD payments

Ofwat has calculated that time incentive payments impose RoRE risk on companies equal to less than $\pm$ 0.5% of regulatory equity, but does not consider non-delivery as a material source of risk for companies.[41] In practice, it is plausible that companies will incur significant costs on some enhancement schemes without delivering against their PCD target due to external factors outside of company control, which could be a large source of penalty payments, and a material downside risk.

Furthermore, since PCDs are new at PR24, there is considerable uncertainty over the magnitude of likely outturn PCD payments. It is difficult to tell ex ante whether PCDs have been incorrectly specified, and if so, to what extent. Therefore, it may be appropriate to introduce an aggregate cap and collar on PCD payments, in order to limit the overall financial risk. PCDs still provide strong incentives for companies to deliver enhancement projects on time, when PCD payments are within the bands of the cap and collar. Ofwat applies similar aggregate sharing mechanisms for ODIs and the totex incentive, with collars based on a share of regulated equity at risk. A similar mechanism for PCDs could ensure a suitable balance between maintaining incentives to companies

[40] *'PR24 draft determinations: Price control deliverables appendix', Ofwat (July 2024), page 10.*
[41] *'PR24 draft determinations: Aligning risk and return appendix 1', Ofwat (July 2024), page 12.*

and providing both companies and customers with sufficient protection in the case of extreme performance, relative to PCD targets.

Any aggregate cap could exclude projects which are cancelled in line with customer interests (e.g. cases where anticipated statutory requirements change) – where Ofwat already proposes to allow companies to retain 6% of allowances and companies should not be disadvantaged for choosing not to deliver a project.

Setting symmetrical time incentive rates

At DDs, Ofwat introduced two-sided time incentives, with reward payments set at 25% per unit penalty rate, and awarded for all units delivered "on time", including any units delivered early. As we set out above, Ofwat argues its asymmetrical incentive rates are appropriate as they ensure risk is "balanced", based on Ofwat's assumptions about rates of late delivery. In practice, it is challenging to accurately predict the likelihood that projects will be delayed, and if Ofwat's assessment is overly optimistic, it exposes companies to risk that is skewed to the downside.

One method for alleviating this risk is to allow for symmetrical incentive rates for units delivered early by rewarding units at an equivalent rate to units which are delivered late. Specifically, a unit which is delivered one year early could receive a reward equal to the penalty faced for units which are delivered one year late. This change would ensure that the marginal incentive for delivering an additional unit is symmetrical either side of the PCD target, and better reflect the benefits to customers from outcomes which are delivered early.

This reward for early delivery could sit alongside Ofwat's efforts to maintain a 'balanced' risk by offsetting penalty payments for units delivered on time. If introduced alongside an aggregate cap (and collar) on PCD payments (see above), Ofwat could protect customers from unbounded reward payments.

Retaining efficiently incurred development expenditure

Ofwat proposes to allow companies to retain 6% of investment allowances if it considers it is in customers' interests not to deliver a funded scheme, once the price control begins. Despite this allowance, PCDs will still discourage companies from redirecting investment or adjusting delivery timescales to deliver better outcomes or improve the efficiency of delivery. In particular, Ofwat's approach will deter companies from pursuing any alternative solutions identified as part of the development of the initially proposed scheme.

As an alternative to Ofwat's simplistic approach, companies could instead be allowed to retain allowances in cases where they can demonstrate an alternative solution can be delivered, albeit with outcomes which do not match the outcome definitions originally specified in the PCD. To allow Ofwat and companies to do this during the price control, we recommend that Ofwat provides guidance at PR24 on a process allowing companies to request permission to adjust the parameters (costs, definitions etc.) of a PCD during the price control.

This would introduce an additional burden on Ofwat and companies within the price control, but given the existing need for Ofwat to assess PCD delivery during the price control in any case, the additional burden should not outweigh the benefit in terms of reducing the distortionary effect of PCDs.

Reducing ODI penalties in overlapping areas

As an alternative to addressing the overlap between PCDs and ODIs via PCD incentive rates, Ofwat could instead address it by reducing ODI penalty rates in cases where the overlap is most material. This helps to alleviate the double jeopardy issue, whereby companies are penalised twice, through both ODIs and PCDs, for the non-delivery of the same outcome.

At DDs, all ODIs rates are set based on RoRE-at-risk bands of 0.6% ("high"), 0.5% (medium") or 0.4% ("low"). A straightforward adjustment would be to move ODIs penalty rates to a lower RoRE band in cases where the overlap is highest. Although Ofwat concluded at DDs that there was no significant overlap between ODIs and PCDs, we disagree, as explained in section 3B. Therefore, this adjustment not only reduces the exposure of companies to PCD risk, but reduces the risk of over-incentivising delivery of certain outcomes.

Since there is no overlap between non-delivery PCDs and ODI outperformance payments, there would be no need to adjust ODI outperformance incentive rates.