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STRATEGIC REVIEW OF CHARGES 2027-33 DRAFT DETERMINATION:

CONSULTATION RESPONSE



Table of Contents

1 Scottish Water Draft Determination Consultation Response 4
1.1 Introduction 4
1.2 Significant Areas of Agreement 5
1.3 Significant Further Modifications are Needed to Strengthen the Final Determination 5
1.4 A Final Determination Informed by Consultation 9
1.5 Our Central Proposition 10
2 Question One – To What Extent Do You Agree That the Draft Determination Strikes the Right Balance Between Outcomes, Investment and Charges? 11
2.1 How We Have Reviewed the Proposal 11
2.2 Our Conclusions 12
2.3 Our Recommendation 18
3 Question Two - To What Extent Do You Agree That Our Proposals Provide Sufficient Customer Protection in SR27? 20
3.1 How We Have Reviewed the Proposal 20
3.2 Conclusions 20
3.3 Our Recommendations 22
4 Question Three - To What Extent Do You Consider That Our Proposed Targets for Outcomes Are Appropriate? 24
4.1 How We Have Reviewed the Proposal 24
4.2 Our Conclusions 25
4.3 Our Recommendations 25
5 Question Four - To What Extent Do You Agree with Our Proposal for Capital Investment? 29
5.1 How We Have Reviewed the Proposal 29
5.2 Our Conclusions 29
5.3 Our Recommendations 35
6 Question Five - To What Extent Do You Agree with Our Proposal for Operating Expenditure? 37
6.1 How We Have Reviewed the Proposal 37
6.2 Our Conclusions 37
6.3 Our Recommendations 40
7 Question Six - To What Extent Do You Agree with Our Proposal to Introduce a Conditional Charge Cap? 42

7.1 How We Have Reviewed the Proposal 42
7.2 Our Conclusions 43
7.3 Our Recommendations 44
8 Question Seven - To What Extent Do You Agree with Our Proposals for Monitoring Scottish Water's Performance Over SR27? 46
8.1 How We Have Reviewed the Proposal 46
8.2 Our Conclusions 46
8.3 Our Recommendations 48
9 Question Eight - To What Extent Do You Agree with Our Proposals for Monitoring Delivery of Scottish Water's Investment Programme? 49
9.1 How We Have Reviewed the Proposal 49
9.2 Our Conclusions 49
9.3 Our Recommendations 50
10 Question Nine - Please Use This Space to Share any Additional Comments on Our Draft Decision 51
10.1 Further Information 51
10.2 Affordability 51
10.3 Regulatory Alignment 52
10.4 Strategic Environmental Assessment 53
10.5 Changes to Process Emissions Factors 54
10.6 Changes to the Investment Planning Scenario 55
10.7 Changes to the Timing of Charges Scheme 55

1 Scottish Water Draft Determination Consultation Response

1.1 Introduction

Delivering high standards of service, evidence-based decisions and sustainable investment at lowest reasonable overall cost

1.1.1 Scottish Water welcomes the opportunity to respond to WICS' Draft Determination for SR27. We recognise the significant work undertaken by the WICS team and appreciate the clear and accessible way in which its analysis and conclusions have been presented. This has enabled meaningful engagement with the evidence, assumptions and judgements that underpin the Draft Determination.

1.1.2 Scottish Water also welcomes constructive challenge. Robust, evidence-based scrutiny has played an important role in strengthening our plans and improving performance over successive strategic review periods. So far in SR27 we have rebalanced investment proposals in our Draft Business Plan following feedback from customers and stakeholders. We postponed around £400m of investment into future periods to enable a reduction in the proposed charges from CPI +4% p.a. to CPI +3.3% p.a., in order to address concerns raised regarding the affordability of bills for customers.

1.1.3 We approach this response in the spirit of Ethical Business Practice and Regulation, with a shared commitment to acting transparently, using evidence well and delivering the best outcomes at an efficient cost for customers, communities and the environment.

1.1.4 Scottish Water's purpose is to support a flourishing Scotland by being trusted to care for the water on which Scotland depends. We play a key role in delivering the Water Sector Vision for Scotland and our Long-Term Strategy, which together seek to secure sustainable water services and lasting value for customers, communities and the environment. We are also building from a successful SR21, which has seen a record level of investment and some of the strongest performance levels we have ever delivered, despite significant global challenges facing the early years of the period, which continue to have an impact on customers, the environment and our supply chain as we head into SR27.

1.1.5 WICS' Final Methodology identifies four priorities for SR27:

- maintaining high standards of service and reliability;
- improving the evidence and analysis which supports decision-making;
- investing for a sustainable industry at lowest reasonable overall cost;
- placing customers at the heart of decision-making.

1.1.6 Scottish Water supports these priorities and has considered the Draft Determination against those same tests.

1.2 Significant Areas of Agreement

1.2.1 There is significant common ground between Scottish Water and WICS. We welcome WICS' recognition that our Final Business Plan reflects wide-ranging and sector-leading engagement with customers, that the investment needs identified are broadly aligned with Ministerial Objectives, that Scottish Water is broadly efficient, and that there are opportunities to deliver improved outcomes for customers, communities and the environment.

1.2.2 We welcome WICS' challenge on some elements of capex and opex costs and can accept around £140m of this. We also acknowledge the additional £168m funding proposed to support additional improved outcomes, and have set out where we believe this should be invested for the benefit of customers and the environment.

1.2.3 We agree that customers benefit from strong challenge, stretching performance expectations and a continued focus on efficiency and value. Scottish Water's Board applies such a challenge on behalf of customers through its review and scrutiny of our Business Plan proposals and this Draft Determination response. Taking account of recent performance, we recognise that there are areas where Scottish Water can and should seek to go further, provided the overall settlement gives us a clear and evidenced route to delivery.

1.3 Significant Further Modifications are Needed to Strengthen the Final Determination

1.3.1 While there is broad agreement on the outcomes Scotland needs and the investment required to achieve them, further modifications to the Draft Determination are required before it can provide a robust, deliverable and sufficiently funded framework for SR27.

1.3.2 Our concern is not whether Scottish Water should be challenged. Robust challenge helps to ensure that investment is efficient, well-evidenced and focused on the outcomes that matter most. The issue is whether the combined effect of the Draft Determination provides a clear and evidenced route to delivering the outcomes expected of Scottish Water while enabling us to exercise our core functions effectively.

1.3.3 In reaching a Final Determination, WICS is tasked with assessing whether the revenues Scottish Water is seeking to recover through charges represent the lowest reasonable overall cost in order to effectively exercise its core functions with a view to achieving Ministerial Objectives. If the Final Determination remains substantially aligned with the Draft Determination, Scottish Water does not consider that it would have sufficient funding during SR27 to deliver the outcomes expected of us while continuing to exercise those core functions effectively.

1.3.4 SR27 will be delivered in a materially different operating environment from SR21. Heightened climate risk, natural capital depletion, greater weather volatility, energy market uncertainty, competition for resources to deliver utility

investment and increasing demands on natural and built asset resilience are changing both the risks Scottish Water must manage and the cost of maintaining reliable services. It would therefore not be appropriate to treat the charge profile agreed for SR21 as a fixed benchmark for SR27 without recognising the significantly changed context in which Scottish Water is now and will continue to operate. There are of course new opportunities too, particularly from deployment of new technology and the leverage of new operating and enterprise models. Scottish Water will pursue these with vigour. However, the scale of cost pressures created by a more challenging climate which affects every aspect of operations far outweighs the realisable benefits from technology or other innovations during the SR27 period.

1.3.5 This is not a matter of resisting challenge. It is a matter of ensuring that the final settlement provides a clear and balanced position between outcomes, investment, funding and risk that protects both current and future customers. A Final Determination that does not sufficiently align these elements would risk weakening the resilience of the essential infrastructure that supports water and wastewater services in Scotland, the standards of service customers expect to receive, and public confidence in the Scottish water sector. Recent experience in England and Wales illustrates the long-term challenges that can arise where investment, resilience and service expectations are not adequately aligned over time.

1.3.6 Across this response, our analysis identifies a consistent theme. The Draft Determination broadly accepts the need for investment and identifies areas where outcomes could be improved. However, several of the funding assumptions, efficiency challenges and uncertainty provisions create severe risks to deliverability. Considered individually, some of these issues may appear manageable. Taken together, they create an unmanageable level of risk that the outcomes expected, the funding provided and the route to delivery are not properly aligned. And, in Scottish Water's publicly funded model, it is customers who will suffer the consequences of such misalignment.

1.3.7 We believe the Final Determination should be strengthened in four important areas.

Updating the evidence base

1.3.8 Throughout SR27, both Scottish Water and WICS have worked with the best information available at the time decisions were taken. Since publication of the Draft Determination, additional information has become available in a number of important areas, including performance, household growth, cash collection and other funding assumptions. We are grateful for the engagement WICS has undertaken so far to assess this additional information.

1.3.9 Scottish Water now has access to updated forecasts and additional evidence in several areas. Where we believe adjustments are justified by the latest available information, either in the shape of changes to our Final Business Plan position or refinements to the Draft Determination, these have been included within our response.

1.3.10 We believe the Final Determination should reflect the latest available evidence wherever it materially affects the conclusions reached.

Ensuring outcomes are deliverable

1.3.11 We welcome WICS' ambition to secure improved outcomes for customers and the environment. However, customers should only be promised outcomes where there is a clear and evidenced route to their delivery.

1.3.12 Whilst WICS has broadly agreed with the level of investment required over the SR27 period, the Draft Determination introduces significant challenges to capital and operational costs, alters a number of revenue assumptions and seeks to increase levels of performance. Our analysis indicates that the combined effect of these positions creates a risk that expected outcomes, available funding and delivery obligations will be misaligned during the regulatory period.

1.3.13 Our analysis suggests that the Draft Determination removes more than £700m in funding[1] whilst seeking a further stretch in outcomes. If not managed through additional funding, this contributes towards an overall efficiency challenge of circa 2% per annum despite WICS concluding that Scottish Water is already operating efficiently. This compares with Scottish Water's Final Business Plan assumption of 0.8% per annum, which is already above the UK water sector efficiency benchmark of 0.7% recently set by the Competition and Markets Authority (CMA) as part of its rigorous and detailed PR24 redeterminations.

1.3.14 Several of WICS' proposed cost adjustments and funding assumptions require further evidence and consideration before they can be relied upon with confidence.

Protecting current and future customers from underfunding

1.3.15 Scottish Water is concerned that, if the positions set out in the Draft Determination remain substantially unchanged, there is a material risk that the funding allowed for during the SR27 period will not be sufficient to support the expenditure required for the effective exercise of those core functions. We therefore believe careful consideration should be given to whether the combined effect of the proposed efficiency assumptions, cost adjustments, revenue assumptions and performance expectations provides an appropriate basis for WICS to satisfy itself that the Final Determination is sufficient and deliverable.

1.3.16 Customer protection is about more than affordability. It is also about ensuring customers receive the services, resilience and environmental improvements they have indicated that they want and are willing to pay for and which the Final Determination will promise. The challenge is therefore not simply to minimise charges today. It is to strike the right balance over time between affordability,

[1] Split between revised funding assumptions, reduced opex allowance, and reduced capex allowance.

service quality, resilience, environmental improvement and intergenerational fairness. It is important, and more efficient, to keep necessary charge increases smooth over time. Otherwise, as has been seen in England and Wales, there is then a need to seek large catch-ups later, to recover lost ground. This is something which customers have told us they want to avoid.

1.3.17 The strong body of high-quality customer research undertaken through the Memorandum of Understanding between WICS, Consumer Scotland and Scottish Water demonstrates that customers support the outcomes and associated charges set out in Scottish Water's Final Business Plan[2]. Customers generally accepted that the plan was ambitious, but questioned whether the outcomes would remain achievable, particularly if investment was delayed or reduced.

1.3.18 Some customers also raised concerns that delaying investment could affect outcomes and increase costs in future periods. Having considered the Draft Determination, we do not believe these concerns have been fully addressed, as it moves Scottish Water further away from the long-term investment projections set out in our Long-Term Strategy and from the support for the Final Business Plan that customers have indicated.

1.3.19 Scottish Water's public ownership model is also important in this context. Under that model, surplus funding can be reinvested for customers or reflected in lower future charges, while the consequences of underfunding are borne by current and future customers in the shape of reduced outcomes and potential large bill increases in future.

1.3.20 This distinction matters when considering comparisons with water companies in England and Wales. Scottish Water does not operate with international infrastructure funds or private shareholders. There is no opportunity to seek additional funding, nor any incentive to generate distributable profits. The Scottish Water Board's aim is to deliver the best outcomes at the lowest affordable cost and it has assessed this position in reaching its conclusions as set out in this response. In the absence of shareholders, the consequences of any underfunding are borne by current and future customers through reduced resilience, delayed investment or lower service and environmental outcomes and potential cost shocks in later periods. WICS should therefore take full account of Scotland's public ownership model, and the statutory and legal framework in which Scottish Water operates, when drawing conclusions from comparator evidence.

1.3.21 The risks associated with underfunding and overfunding are fundamentally asymmetric and should be considered accordingly. We must also not lose sight of the increasingly challenging impacts of climate change[3] on our assets, our operations and on the services received by customers. Recent years have seen

[2] "The research found support for, and acceptance of, Scottish Water's Final Business Plan, which was broadly considered to be balanced and sensible by the participant household and non-household consumers." Consumer Scotland's Letter to WICS – Final phase 3 outcomes for SRC27 – findings – 20/4/26

[3] Since publishing our Final Business Plan we note there is growing concern that the pace and impact of climate change is under-represented in national climate projections, as referenced in 'A Well-Adapted UK, The Fourth Independent Assessment of UK Climate Risk' from the Climate Change Committee and the National Emergency Briefing

significant shifts in our climate and the associated weather extremes, with more frequent instances of water scarcity, higher summer temperatures and increased intensity and frequency of rainfall. Decisions taken in SR27 will have implications not only for current customers, but also for the resilience of Scotland's water infrastructure over the longer term.

Managing material uncertainties

1.3.22 Scottish Water supports the principle of uncertainty mechanisms where costs arise from factors outside management control. However, we believe WICS' current proposals require further development to provide balanced protection for customers and ensure we can meet the needs of stakeholders.

1.3.23 A strengthened approach which balances customer charges and outcomes would help ensure that customers do not pay for costs that do not arise, while also reducing the risk that agreed outcomes become undeliverable when unavoidable cost pressures do materialise. We believe this is particularly important in relation to real price effects, household growth assumptions and cash collection risk.

1.3.24 We have concerns about the use of the proposed conditional charge cap for West Central Bioresources, as it would create a significant degree of funding uncertainty that could delay and/or increase the costs of the delivery of this project. It is also contrary to the appropriate use of the Investment Planning and Prioritisation Framework process.

1.4 A Final Determination Informed by Consultation

1.4.1 The purpose of consultation is to improve decisions. As additional evidence has emerged since publication of the Draft Determination, Scottish Water's assessment has also evolved in some areas. Equally, WICS will receive further evidence and perspectives from a wide range of stakeholders through this consultation process.

1.4.2 We believe it would be reasonable for the Final Determination, informed by consultation responses, updated evidence and further engagement, to differ materially from the Draft Determination where the evidence supports that change. This should be viewed as a strength of the process. It reflects the purpose of the Strategic Review of Charges and its various stages: testing assumptions, improving evidence, refining proposals and strengthening decisions in the interests of customers now and in the future.

1.4.3 Scottish Water has worked with key stakeholders and taken account of their views in developing this response to the Draft Determination. This has included engagement with our quality regulators, SEPA and DWQR, on specific areas of our investment programme. We have made pragmatic choices that balance stretching but achievable outcomes against cost. We have also considered the overall balance of the plan with Consumer Scotland and the Independent Customer Group, providing early sight of areas of challenge and overall messaging so they can respond independently to the Draft Determination.

1.5 Our Central Proposition

1.5.1 Scottish Water believes the Final Determination must balance:

- the outcomes expected;
- the investment required to deliver them;
- the funding available to support delivery; and
- the risks and uncertainties that may arise during the period.

1.5.2 Customers should be able to understand not only what outcomes are being promised, but also how those outcomes will be delivered, how risks and uncertainties will be managed and what trade-offs may be required if circumstances change. In our view, this transparency sits at the heart of Ethical Business Practice and Regulation.

1.5.3 The modifications proposed throughout this response are intended to strengthen that connection and support a robust Final Determination. The changes proposed are based on the best available and most up-to-date evidence and we are confident that WICS, as an evidence-based regulator, will take these into account in reaching a Final Determination that creates the conditions for successful, efficient delivery of desired outcomes over the regulatory period, and enable Scottish Water to maintain and improve high standards of service and reliability, protecting the interests of current and future customers.

1.5.4 We look forward to continuing to engage constructively with WICS and other stakeholders as the Final Determination is developed.

2 Question One – To What Extent Do You Agree That the Draft Determination Strikes the Right Balance Between Outcomes, Investment and Charges?

2.1 How We Have Reviewed the Proposal

2.1.1 The Draft Determination sets out WICS' initial view on whether Scottish Water's proposals for investment, charges and outcomes in the Final Business Plan are justified, efficient, and provide value for money. WICS is tasked with assessing whether the revenues we are seeking to recover through charges represent the lowest reasonable overall cost for us to exercise our core function, achieve Ministerial Objectives, and protect the interests of current and future customers. As such it is essential that the right balance is struck between outcomes, investment and charges.

2.1.2 To respond to this question, we have reviewed each individual proposal on its own merits, with additional detail being contained throughout this response. We have then considered the impact of each proposal "in the round" to assess the overall balance of the Draft Determination. This has involved detailed analysis conducted by subject matter experts, a full review of the assumptions and positions contained within the Draft Determination and taking independent advice from acknowledged regulatory economics experts.

2.1.3 We have also obtained specific external economic advice to help us assess matters such as Real Price Effects and efficiency considerations. We have taken legal advice on the relevant legal framework, specifically WICS' statutory duties and functions when setting price controls and how this applies to SR27.

2.1.4 In considering the balance between outcomes, investment and charges, we find that, in the round, the proposals in the Draft Determination create a package that does not provide a sufficient level of funding to deliver the outcomes expected. This therefore hampers Scottish Water's ability to meet the Ministerial Objectives. It means that the expectations of our customers and stakeholders are also likely not to be met. And it means that Scottish Water's Board cannot be confident that Scottish Water can exercise its core functions.

2.1.5 We have heard from customers about the importance that they place on Scottish Water delivering outcomes in return for a level of charging which represents value for money. This has come through strongly as part of the research programme under a Memorandum of Understanding between WICS, Consumer Scotland and Scottish Water.

2.1.6 In Consumer Scotland's phase 2 research participants noted that, "Scottish Water should generally be braver about investing more money into the system sooner, and a further assertion made by some participants that this would be likely to save customers money in the long-term. This was thought to

be particularly relevant when discussing investment in infrastructure, including maintenance of infrastructure."[4]

2.1.7 We have also given close consideration to WICS' functions in relation to the setting of charge caps. In doing so, we have considered the reasonableness of regulatory challenges to what Scottish Water regards as the necessary funding levels for the effective exercise of its core functions to achieve the objectives set by Scottish Ministers at the lowest reasonable overall cost, both to customers during the SR27 period and over the longer-term.

2.2 Our Conclusions

2.2.1 In the round, while there are some areas where we agree with challenges WICS has made, our analysis demonstrates that the Draft Determination does not strike the right balance between outcomes, investments and charges.

2.2.2 Our primary concern is that the proposals in the Draft Determination create an overall package that does not provide a sufficient level of funding to enable the delivery of our Final Business Plan for the SR27 period. A Final Determination on the basis proposed by WICS in its Draft Determination would not allow Scottish Water to meet the Ministerial Objectives and the expectations of our customers and key stakeholders.

There is broad alignment on investment needs

2.2.3 WICS has largely agreed with Scottish Water about the investment needs identified in its Final Business Plan. It is welcome that WICS views the overall needs case for investment as generally robust and aligned with Ministerial Objectives[5].

We broadly agree we can and should go further in our performance commitments

2.2.4 Having carefully considered WICS' challenge to us on the outcomes that we should deliver over the SR27 period – and taking into account recent strong performance – we also agree there are areas in which Scottish Water could go further in its performance commitments for the benefit of customers, communities and the environment.

2.2.5 In brief we conclude that – of the 18 outcomes where the Draft Determination has proposed a more stretching target or questioned the outcome – we have sufficient evidence to enable us to accept nine of these in full and seven in part, dependent on additional funding being allowed for in WICS' Final Determination. However, for two outcomes we do not believe we can improve performance beyond the Final Business Plan level, and therefore we are proposing a revised set of targets. More information can be found in our response to Question Three and Annex 3.

[4] Consumer Scotland phase 2 report, page 24
[5] WICS, Strategic Review of Charges 2027-33: Draft Determination, Section 5.1.3, p.199

Dynamic investment planning offers the opportunity to rebalance

2.2.6 WICS and other key stakeholders will legitimately wish to ensure that customers do not "overpay". Scottish Water shares this wish. However, in the context of the Scottish model where no dividends are paid to shareholders, and any surpluses made are reinvested for the benefit of customers or returned in lower bills in future years, the risks to customers of lower than sufficient funding versus higher than sufficient funding are asymmetric.

2.2.7 Moreover, in a system where Scottish Water's Board's duties are to ensure services are provided to customers efficiently, aiming for value for money and customer satisfaction, and where WICS and other stakeholders have a very high degree of transparency over how Scottish Water spends its funds, and an on-going influence through the Investment Planning and Prioritisation Framework (IPPF), other safeguards are in place. This system means the decisions on how any surplus funds are spent (including whether they should be returned to customers) can be discussed openly with WICS and other stakeholders.

2.2.8 In considering this point we have taken into account the fact that WICS has recognised Scottish Water as a broadly efficient company and that benchmarking has demonstrated Scottish Water to be an upper quartile efficient company compared to other UK water companies. Therefore, the risk is restricted to the potential of surplus funds being available to reinvest or return to customers as opposed to surplus funds being used to cover inefficiency.

We have significant concerns about the balance of proposals regarding costs and funding

2.2.9 To support the reduction of the proposed customer charge, the Draft Determination makes a number of funding assumptions, as well as imposing various costing and efficiency challenges. We consider that a number of these assumptions and challenges require further evidence or adjustment (for example, we note that a further year of actual growth data is now available that was not available to WICS as it completed the Draft Determination). Without this, the achievement of investment and outcomes for customers would be affected. The impact of this would be felt by current customers through potential service quality implications, and by future customers through higher charges or reduced service quality in future regulatory periods.

2.2.10 In particular, we highlight the following concerns with the Draft Determination:

- **Equivalent customer charge:** The Draft Determination sets a customer charge cap of CPI+1.6% p.a. on a like-for-like basis with our Final Business Plan (which proposed CPI 3.3% p.a.), not including the proposed additional funding of £168m.
- **Efficiency challenge:** Our analysis shows that the Draft Determination effectively includes a c.2% per year on-going efficiency challenge for Scottish Water despite WICS finding the plan to be broadly efficient

overall and against recent CMA decisions that establish 0.7% as an appropriate level of frontier efficiency challenge within the UK water sector.

- **Cost Adjustments:** The Draft Determination makes what Scottish Water regards as a number of other unevidenced cost adjustments, which increase the overall efficiency challenge further. These are detailed in Annexes 4 and 5, and include a £100 million downward adjustment to the costs of operating the PFI assets which are returning to Scottish Water control.
- **Growth Assumptions:** The Draft Determination assumes household growth rates that are not in line with actual household growth in 2025/26 or up-to-date forecasts for 2026/27, thereby affecting the actual level of funding that Scottish Water will have available to invest.

A challenging efficiency assumption of effectively c.2%

2.2.11 Scottish Water is not seeking to avoid a stretching but achievable efficiency challenge. We recognise that customers and stakeholders rightly expect us to continue improving productivity and value for money. Our Final Business Plan therefore included a demanding ongoing efficiency assumption of 0.8% per annum, which remains above the CMA's recent 0.7% frontier shift assumption for the water industry.

2.2.12 Delivering this level of frontier efficiency will require a sustained programme of innovation and improvement across the SR27 period even as the background challenges from climate change in particular continue to increase. This includes better use of data and digital tools to support asset management and operational decision-making; targeted use of new technologies, automation and artificial intelligence where these can improve productivity or service outcomes; improved planning and prioritisation of investment through the IPPF; and continued collaboration with our supply chain including our new Enterprise Model to improve delivery efficiency, standardisation and whole-life value.

2.2.13 The scope for efficiency through innovation is real, and Scottish Water is committed to pursuing it. However, the efficiency challenge must be calibrated in a way that recognises our already efficient starting point, the current productivity environment, and the real input cost pressures faced by both Scottish Water and its supply chain. Scottish Water will be operating in a materially changed environment, shaped by climate change, natural capital pressures, energy uncertainty and increasing demands on asset resilience. A stretching but achievable challenge will best support innovation-led improvement while protecting delivery of the outcomes that customers, communities and regulators expect. The Final Determination should therefore assess the funding, efficiency and RPE assumptions required for 2027-33 on their own merits, rather than treating SR21 as a stable benchmark.

2.2.14 The Draft Determination has shifted our ongoing frontier efficiency challenge from 0.8% to 1%, has removed our allowance for labour Real Price Effects[6] (RPEs) (of 0.2%), and has made limited allowance for other above-inflation cost increases Scottish Water is likely to face in the period, providing 0.3% for the final three years in relation to potential energy and pension costs. This compares with our estimate of expected total RPEs of around 0.5% per year on opex and 0.7% per year on capex. Moreover, these decisions are made in the context of Consumer Price Index (CPI), rather than Consumer Price Index with Housing Costs (CPIH), (the commonly-used indexation indicator used by other regulators, including Ofwat and Ofgem) within the charge control.[7] Taken in the round, this provides an effective ongoing efficiency challenge of c.2% each year, should other mechanisms not be available to manage these.

2.2.15 This high level of challenge on efficiency is despite WICS finding the Final Business Plan to be broadly efficient, and before any specific opex/capex cost challenges are taken into account (such as the adjustments on returning Private Finance Initiative (PFI) sites, energy cost catch-up, unit cost challenges on the capex programme etc). We consider this level of efficiency challenge to be insufficiently evidenced, not supported by relevant comparisons with efficiency achievable in the sector or the wider economy, and unlikely to be deliverable in the context of setting charge caps for the SR27 period.

2.2.16 WICS' proposed frontier efficiency challenge appears to rely on a productivity benchmark that we do not consider appropriate for this purpose. It also conflicts with the most recent and most relevant precedent, which comes from the CMA's PR24 redeterminations, where it decided that the economic evidence supports a frontier shift challenge of 0.7% for the water industry. This is an important reference point from the Scottish water industry's appeal body, to which we believe WICS should give due weight.

2.2.17 Our proposed ongoing efficiency assumption remains at 0.8% per annum, in line with our Final Business Plan. In saying this, we acknowledge that there are reasons why it might now be appropriate to select a lower allowance (e.g. the CMA's preferred figure of 0.7%). In particular, we note that there has been a downgrading of productivity forecasts by both the Office of Budget Responsibility (OBR) and Bank of England since we worked up our SR27 costings in spring 2025. However, we believe that it is right that we stick to our previous target provided that WICS is able, when it makes its Final Determination, to incorporate the full set of cost allowances that we have explained that we require in this response.

[6] Real price effects are price/cost movements that exceed the general rate of inflation. These can arise because regulated firms' inputs (labour, energy, materials etc) differ from the basket of goods that are used to make up broader inflation indices, such as CPI. It is standard regulatory practice for a regulator to allow for changes in input prices and can be measured using agreed cost indices.

[7] The Office for Budget Responsibility (OBR) estimates a long-term positive structural "wedge" of 0.4% between CPI and CPIH. Indexation of the charge control to CPI inflation therefore provides lesser protection against inflation than the use of CPIH. Which is the ONS' preferred measure of general inflation and the basis of indexation by most other UK regulators.

2.2.18 Similarly, the Draft Determination's treatment of RPEs is materially out of line with the approach adopted by other UK regulators (see Table 1, below), particularly taking into account that other regulators also index to CPIH, which is expected to exceed CPI by around 0.4% on average during SR27, before then adding a further RPE allowance. This creates an efficiency stretch that we do not consider deliverable without reducing the level of investment available and therefore compromising achievement of customer outcomes and the delivery of Ministerial Objectives. We will always strive to deliver stretching efficiency targets on behalf of our customers, but these targets must be deliverable.

Table 1: UK Regulator labour RPEs[8]

Regulator, review	Year	RPE
WICS, SR27	2026	CPI + 0% [provisional]
NI UR, RP7	2024	CPIH + 1.0%
Ofwat, PR24	2024	CPIH + 0.7%
Ofgem, RIIO-GD&T3	2025	CPIH + 0.1% to 1.5%
CMA, PR24	2026	CPIH + 0.7%

2.2.19 In response to a clarification question, WICS indicated that any RPE challenges that manifest during the SR27 period would be addressed via the IPPF process. We do not consider this proposed treatment to be in the best interests of customers, nor to accord with the outcomes of the extensive customer engagement that has been undertaken.

2.2.20 RPEs are essentially costs outwith management control that are highly likely to occur. Recognising them within a price control is something that has been acknowledged in all recent regulatory decisions. If they were treated in the way that WICS proposes in its Draft Determination, it would mean that the impact of these costs would have to be absorbed entirely through reduction in investment and outcomes.

2.2.21 We do recognise that the IPPF mechanism could be used to manage some level of uncertainty about the precise quantum of RPEs.

2.2.22 However, as set out below, we believe a methodology for calculating RPEs (and other uncertain cost factors) needs to be set out in the Final Determination to ensure clarity for all stakeholders and avoid in-period disagreements.

Cost adjustments requiring further evidence or refinement

2.2.23 The Draft Determination is based on a number of cost adjustments, in relation to both operating costs and capital expenditure, which Scottish Water considers require further evidence or refinement. These adjustments also increase the risks associated with the proposed efficiency challenge.

[8] This table sets out the allowance that other regulators have made for labour RPEs. These regulators have also made separate allowances / indexation for energy and materials cost increases in their reviews.

2.2.24 With respect to operating costs, the Draft Determination's £100 million reduction in operating cost allowance for returning PFI assets assumes that Scottish Water is able to change the capital/operating models that have been selected by its PFI partners, immediately on the transfer of these assets to us to achieve greater efficiency. This is not realistic. We therefore invite WICS to recognise the need for a transition period to allow for the investment needed to reconfigure these assets that can then unlock future efficiencies.

2.2.25 While we broadly agree with the overall findings of WICS econometric benchmarking of the efficiency of forecast opex on the returning PFI sites in terms of the long-term efficient level of costs, we propose an approach which recognises the need for a transition period during which allowance is made for our actual costs of operating these sites, with efficiencies reducing the allowance in the latter part of the regulatory period. This gives an overall reduction in returning PFI operating costs of £27.1 million over the SR27 period. We have covered further reasoning on our challenge to this position, and other operating cost adjustments in the response to Question Five and Annexes 5c and 5d.

2.2.26 With respect to capital investment costs, the Draft Determination has also made some interventions where WICS believes that the investment Scottish Water has proposed is not well evidenced or where it believes there is scope for further efficiency, equating to a total of £185m difference between the Final Business Plan and the Draft Determination (excluding the frontier efficiency and RPE challenge mentioned above). Here we have accepted a proportion of this challenge, including proactively reviewing returning PFI maintenance capex and identifying material savings. In other areas we have provided further evidence and explanation to support the cost estimates included in our Final Business Plan. Further detail on the Draft Determination's adjustments on capital costs is provided in our response to Question Four and Annex 4a.

Reliance on growth assumptions

2.2.27 Due to the timing of publication, the Draft Determination included forecast household growth rates that are not in line with actual household growth in 2025/26 or up-to-date forecasts for 2026/27 which are now available. Scottish Water estimates that this risks creating a funding gap of £46m over the SR27 period compared to the forecast growth rates set out in the Final Business Plan. We propose reverting to the household growth assumptions set out in the Final Business Plan within the Final Determination.

2.2.28 Growth has dropped markedly in the latter half of 2025/26 and fell further at the start of 2026/27. While we do not propose altering the forward-looking growth assumption included in our Final Business Plan and in the Draft Determination of 1.0% per year, we note that there are risks around this estimate. Were household growth rates to turn out higher or lower over the SR27 period, this will have a material impact on the amount that Scottish Water has available to invest. For example, if household growth averaged 0.8% over the SR27 period,

this would create a funding gap of around £90 million. Given the importance of this assumption, the uncertainty over actual growth rates and the fact that these are outwith Scottish Water's control, we propose this element of risk to revenue be dealt with through an uncertainty mechanism

2.2.29 More detailed analysis and additional evidence on growth forecasts and other material financial model assumptions which impact on available funding can be found in Annex 2.

2.3 Our Recommendation

2.3.1 As noted, we are concerned that investment will need to be reduced from the level set out in the Draft Determination due to incorrect assumptions related to costs and funding, with negative implications for outcomes for customers over the SR27 period and for costs then needing to be borne by future customers over following regulatory periods.

2.3.2 To address these concerns, we propose a series of adjustments to the proposals in the Draft Determination:

- While we accept the additional stretch in many of the outcomes proposed in the Draft Determination, we do not believe the level of stretch in leakage, per capita consumption, repeat interruptions to supply, discolouration contacts, drinking water compliance, and WWTW permit compliance are deliverable. However, we have rebased our starting position using our latest performance data and identified how the additional £168m of funding proposed in the Draft Determination could be allocated to support improvements to a number of metrics beyond those contained in our Final Business Plan.
- Reinstatement of £71.7 million of operating costs relating to returning PFI sites, of £21 million of increased energy costs and £5 million of other operating costs.
- Restoration of £131 million of capital cost allowances relating to specific cost challenges.
- Removal of a further £32 million of capital cost allowances in relation to PFI capital maintenance costs and investment at the Persley and Nigg sites. Prompted by concerns raised by WICS in the Draft Determination, Scottish Water has reviewed our investment needs in these areas and identified investment needs/scopes that are not required in the SR27 period.
- Adjustment of the frontier efficiency challenge to 0.8%, recognising that this remains a stretching and credible efficiency commitment for an already efficient water company and will be delivered through continued innovation, better use of data and digital capability, improved asset management and operational decision-making, and close collaboration with delivery partners. The efficiency challenge should be assessed on a "totex" basis rather than separately against opex and capex, in line with regulatory best practice.
- Expansion of the proposed uncertainty mechanism to ensure a balanced approach to managing the risks of in-period cost changes that are

outside Scottish Water's control, including labour, energy and materials real price effects on opex and capex, actual household growth rates, and movements in cash collection rates. We propose a mechanism that objectively and transparently quantifies the impact of these effects throughout the SR27 period and provides for an adjustment of up to +/- 0.5% on prices from year 3 of the period (i.e. 2029/30 onwards). We propose remaining cost pressures are addressed via changes in the scope of the capital programme and associated outcomes, which should be considered through the IPPF, with any surplus being utilised to deliver more outcomes or returned to customers. This should replace the Draft Determination's specific limited allowance for energy and pension costs.

2.3.3 This is what Scottish Water believes would represent the right balance between outcomes, investment and charges, consistent with delivering the outcomes that our customers have told us that they value.

2.3.4 We have provided a more detailed summary of our position of the overall impact of the Draft Determination and our response in Annexes 9a and 9b.

2.3.5 We believe that on a like for like basis, based on the challenge WICS has provided in its Draft Determination, Scottish Water can deliver the Final Business Plan, with a level of enhanced outcomes based on updated performance levels, for a customer charge of CPI+2.8% p.a.

2.3.6 We acknowledge WICS' proposal of a further £168m of funding to support further progress on the outcomes that matter to customers and regulators. If included in the Final Determination, this would increase the required unconditional charge cap to CPI+3.2% per year.

2.3.7 We propose a reformed uncertainty mechanism that provides for an adjustment of up to +/-0.5% on prices for the last 4 years of the SR27 period, with remaining cost pressures addressed via changes in the scope of the capital programme and associated outcomes, which should be considered through the IPPF.

3 Question Two - To What Extent Do You Agree That Our Proposals Provide Sufficient Customer Protection in SR27?

3.1 How We Have Reviewed the Proposal

3.1.1 In response to this question, we have reviewed the strong body of customer research gathered by Scottish Water and Consumer Scotland, this research is now complete and can be analysed in depth as a collective body of evidence, rather than as individual elements. Throughout the research we have clearly seen the importance customers place on achieving an acceptable level of improved outcomes for an associated charge which represents value for money.

3.1.2 In considering whether the Draft Determination provides sufficient customer protection, we have also had regard to WICS' role in setting charge caps at the lowest reasonable overall cost required to enable Scottish Water to exercise its core functions and deliver Ministerial Objectives. Customer protection must therefore be considered as relating both to outcomes and to charge levels, ensuring that Scottish Water is sufficiently funded to deliver the services, resilience and outcomes customers have been promised within the customer charge. It must also consider the interests of future customers as well as customers during the SR27 period. Scottish Water strongly believes that customer protection should not just ensure charges are affordable, but that current and future customers receive the levels of service and outcomes they expect.

3.1.3 As research progressed and we refined the outcomes which could be delivered, some customers also raised concerns about the impact of delaying investment relative to the Draft Business Plan position, and the subsequent impact this could have on outcomes and costs in future periods. We achieved broad support for the balance of outcomes and costs in our Draft Business Plan in qualitative research and responded to the concern on affordability seen in the quantitative research by making double-sided adjustments (removing costs and scope to reduce the overall size of the programme and consequently customer bills). Consumer Scotland's phase 3 research on the Final Business Plan clearly showed that the overall package of outcomes and associated charges of the Final Business Plan command the support of customers.

3.1.4 As with Question One, we have reviewed each individual proposal under 'safeguards, risk and uncertainty' on its own merits and then considered the impact of the proposals on the overall balance of the Draft Determination to consider whether proposals provide sufficient customer protection.

3.2 Conclusions

3.2.1 Overall, we do not believe the Draft Determination provides sufficient protection for current and future customers against the risk of reduced investment and associated outcome impacts.

3.2.2 We are also concerned that the Draft Determination risks failing to make provision for protection to customers over future regulatory periods, in particular

the risk of charge increases to deliver the investment that is likely to need to be reprioritised out of SR27, against a backdrop of bill increases that will be needed to maintain the ageing network and address the rising challenges of climate change.

3.2.3 In this context, we have four specific areas of concern with regards to customer protection in SR27:

1. Insufficient funding which has been covered in our response to Question One.
2. The limited coverage of the Uncertainty Mechanisms for cost pressures that are outside Scottish Water's control, which is described below.
3. The proposed conditional charge cap for West Central Bioresources, which is covered briefly here, and more fully in our response to Question Six and detailed in Annex 6.
4. The proposed "hurdle" for Scottish Water to trigger an Interim Determination of charges which is that 'the relevant change must be 10% or more of Scottish Water's turnover in the year of the request over the SR27 period on a Net Present Value basis'.

Limited coverage of the uncertainty mechanisms

3.2.4 We agree that uncertainty mechanisms can play a useful role in the Strategic Review of Charges process. We note the regulatory precedents from the water and energy sectors and broadly support their introduction outside of the traditional process for interim redeterminations associated with a material change in circumstances.

3.2.5 Where material changes in costs over the period are possible but the timing and quantity of those costs arising is uncertain then such a mechanism protects customers by only increasing the customer charge if and when the costs pressures come to bear on Scottish Water. This is an appropriate approach for costs that are largely outside Scottish Water's control. Applying these mechanisms ensures that customers are not asked to fund costs that do not materialise, but also that the investment and operating activities required to deliver the outcomes customers have been promised are adequately funded.

3.2.6 Therefore, while we welcome WICS' proposal of an uncertainty mechanism to address potential operating cost items in energy and pension contributions, where we are not yet fully confident of scale or if these costs will be needed, we believe a broader and more comprehensive approach is required. Such an approach would aim to avoid material reductions in the capital programme due to costs materialising that Scottish Water cannot control, and to provide greater clarity about the trade-offs that may need to be made. Without that clarity, there is a risk that Scottish Water could be seen to under-deliver against capital investment and outcomes where the underlying issue is the unrealistic level of costs allowed during the period. This could affect confidence in delivery and in the regulatory framework in Scotland.

3.2.7 We recognise WICS' concern to ensure price stability for customers. We also note the potential concern that more extensive use of this type of uncertainty mechanism could undermine that. However, we observe that:

- the extent of the uncertainty mechanism could be limited in any given year to avoid material movements in prices for customers;
- there is a balance to be struck between limiting and smoothing price increases in the current period – to the extent that investment is deferred into future periods – and the impact on future customers who may consequently have to face steeper price increases and even greater volatility to enable a catch up in investment in the network to restore performance; and
- increased volatility in CPI in recent years has meant that customer charges are naturally more volatile than they were in the past, and we do not believe that the uncertainty mechanism we set out in detail in Annex 9b would materially add to that.

Conditional charge cap for West Central Bioresources

3.2.8 We are concerned that the Draft Determination's proposals for a conditional charge cap in relation to the West Central Bioresources (WCB) project creates a significant degree of funding uncertainty, may delay the delivery of this project with material consequential impacts on our ability to make operating cost efficiencies, and is contrary to the appropriate use of the Investment Planning and Prioritisation Framework (IPPF) process. Our response to Question 6 which is specifically related to conditional charge caps considers this in depth.

3.2.9 In short, we believe that the conditional charge cap for WCB is unnecessary:

- in terms of protecting customers;
- because it undermines the aims of i) having a dynamic investment programme and ii) ensuring a smooth profile of increasing investment over time to protect future customers from significant step changes in charges with the associated equity concerns; and
- as the process set out for the conditional charge cap risks introducing disproportionate planning and delivery uncertainty risk to the project, with potential impacts on overall costs and delivery timeframes.

10% "hurdle" for an Interim Determination

3.2.10 We recognise that the approach set out in the Draft Determination is consistent with that adopted by other regulators in the UK. However, Scottish Water's financial position, notably our inability to borrow other than from the Scottish Government, gives us less flexibility to manage in-period "shocks" than other regulated companies in the UK. As a result, there is a greater risk that any such external shocks will need to be addressed via a reduction in the capital investment programme with consequential effects on outcomes in the SR27 period and on the required level of charges for future customers.

3.3 Our Recommendations

3.3.1 To address these concerns, we propose a series of adjustments to the proposals in the Draft Determination:

- The expansion of the proposed uncertainty mechanism to:
    - provide protection for the full range of potential "real price effects" on costs that are largely outwith Scottish Water's control, across both operating and capital costs;
    - make adjustments for actual household growth rates; and
    - make adjustments for changes in cash collection rates.
- The mechanism should quantify the impacts of the above factors from the start of the SR27 period, and provide for certain limited adjustments to prices to be applied from year 3 (i.e. 2029/30) onwards. We propose that price adjustments within the uncertainty mechanism be capped at +/-0.5% to provide a reasonable level of price protection for our customers, with cost pressures beyond that level being addressed via changes to the scope of the capital investment programme and associated outputs, via the IPPF. Our reasoning and evidence for this proposal, and why it offers the best protection for customers is included in Annex 9b.
- We propose that the conditional charge cap for West Central Bioresources be removed, and that proposed performance and delivery monitoring mechanisms and the Investment Planning and Prioritisation Framework provide adequate protection to customers from the risks identified in the Draft Determination in relation to the West Central Bioresources project.
- We recommend that the Final Determination adjusts the “hurdle rate” for considering an interim redetermination of charges from changes which amount to 10% or more (on a Net Present Value basis) of Scottish Water’s turnover in the year of the request to 5%.

3.3.2 These amendments to the uncertainty mechanism would alter the potential charge impact from the (upwards only) 0.3% p.a. for the last 3 years of the SR27 period proposed in the Draft Determination to +/-0.5% p.a. for the last 4 years of the SR27 period. Our analysis that supports this position is provided in the documents in Annex 5.

4 Question Three - To What Extent Do You Consider That Our Proposed Targets for Outcomes Are Appropriate?

4.1 How We Have Reviewed the Proposal

4.1.1 The Draft Determination reviewed the 49[9] Outcome Measures in Scottish Water's Final Business Plan and concluded the following:

- Accepted: 15 service outcomes and 3 carbon emission outcomes
- Stretched: 16 service outcomes and 2 carbon emissions outcomes
- Questioned: 2 service outcomes and 3 carbon emissions outcomes
- Sought further development: 6 service outcomes
- Rejected as unnecessary: 2 service outcomes

Table 2: Outcome comparison Final Business Plan to Draft Determination

Outcomes: Final Business Plan (FBP) to Draft Determination (DD) – 2032/33 comparison

Customer Service

Metric description	Units	FBP	DD	Change	Group
Developer customer experience measure	Score	84.23	84.20	0%	A
Non-household customer experience measure	Score	90.17	90.20	0%	A
R-MeX (wholesale services)	Score	9.00	9.00	0%	A
Household customer experience measure	Score	88.35	88.40	0%	A
UKCSI	Score	77.90	77.90	0%	A
Communities measure (ABC measure)		-	-	-	D
Asset health		-	-	-	D
Strategic Tracker	%	23	-	-	E

Net Zero

Metric description	Units	FBP	DD	Change	Group
Net Zero Emissions	tCO2e	198,126	212,637	-7%	B
Operational emissions (W)	tCO2e	9,688	9,688	0%	A
Operational emissions (WW)	tCO2e	71,291	98,291	-38%	C
Baseline emissions	%	0.82	0.77	7%	C
Operational emissions (net)	tCO2e	54,529	81,529	-50%	C
Investment emissions	tCO2e	143,597	131,108	9%	B
Carbon capture/sequestration	tCO2e	-26,450	-26,450	0%	A
Biodiversity land-use		-	-	-	A
Biodiversity outcomes		-	-	-	D
Resource recovery		-	-	-	D
New net operational metric	tCO2e	92,816	92,816	0%	A
Investment Intensity	%	51	51	0%	A

A. DD Accepted: 15 service outcomes and 3 carbon emission outcomes
B. DD Stretched: 16 service outcomes and 2 carbon emission outcomes
C. DD Questioned: 2 service outcomes and 3 carbon emission outcomes
D. DD sought further development: 6 service outcomes
E. DD Rejected as unnecessary: 2 to be unnecessary

Water

Metric description	Units	FBP	DD	Change	Group
Total leakage	% Reduction	9.9	15.7%	59%	B
Zonal leakage in deficit zones	% Reduction	12.9	20.4%	58%	B
Business demand	% Reduction	14.9	14.9%	0%	A
Per capita consumption (PCC)	l/head/d	174	165	5%	B
Low pressure	Properties	26	20	23%	B
Unplanned interruptions	Properties	7,000	5,000	29%	B
Minutes lost	Minutes	15.00	10.40	31%	B
Repeat ITS	Postcodes	240	170	29%	B
Worst historic drought	Pop at risk	2,564,000	2,564,000	0%	A
Peak demand	Pop at risk	876,753	876,753	0%	A
Taste & odour	Contacts / pop	0.51	0.46	10%	B
Discolouration	Contacts / pop	1.90	1.33	30%	B
Lead SW networks	Number	25,154	25,154	0%	A
Lead customer pipes	Compliance	0.98	0.98	0%	A
Drinking water compliance	% Compliance	99.95	99.97	40%	B
WRAP	Score	4,568	4,568	0%	D
DWQR reported incidents	No. of incidents	25	25	0%	A
Lead pipes removed public network	Number	18,000	18,000	0%	A

Environment

Metric description	Units	FBP	DD	Change	Group
Annual internal sewer flooding	No/props	1.48	1.27	14%	B
Internal sewer flooding register	No/props	1.47	1.17	20%	B
Annual external sewer flooding	No/props	11.16	9.52	15%	B
External sewer flooding register	No/props	11.88	10.83	9%	B
WwTW discharge compliance	Fails / 580 works	96%	96%	0%	C
Serious pollution (EPI Cat 1/2)	Number	5	4	20%	B
Total pollution (all categories)	Number	34.8	31.5	9%	B
Sludge compliance	Compliance	0.0	0.0	0%	A
Network discharges (UIDs)	Number	712	712	0%	C
River water quality		-	-	-	D
UID removals in SR27	Number	150	-	-	E

4.1.2 It is important that the right balance between stretching but deliverable targets is achieved to avoid undermining the trust customers have in the water sector model in Scotland and creating detrimental impact to both our customers' experience and the wider water environment.

4.1.3 In completing this analysis for these outcomes we have:

1. rebased our SR27 starting position (usually 2026/27 forecast) using the latest available performance data for the last year;
2. engaged with the evidence provided in the Draft Determination; and
3. considered how the additional investment allocation of £168m proposed in the Draft Determination could be distributed across outcomes, should it be retained in the Final Determination.

[9] There are 44 measures within Table 1 of the Final Business Plan, a further 5 form part of the Final Business Plan submission.

4.1.4 We have focussed mainly on the start and end positions for the outcomes. Whilst we show annual outcome profiles in the tables within Annex 3, they should be considered as indicative only at this stage. The annual profile is highly dependent on many other factors in this Response to the Draft Determination and therefore we intend to fully analyse the specifics of the annual outcome profile as part of the Delivery Plan baselining exercise once we receive the Final Determination.

4.1.5 Please note that the increased outcomes beyond Final Business Plan baseline are contingent on:

1. the allocation of the £168m proposed in the Draft Determination being retained in the Final Determination; and
2. the Final Determination addressing the concerns we have raised in the Draft Determination regarding the proposed efficiency and/or cost challenges.

4.1.6 This section focuses on responding to the 23 “Stretched” and “Questioned” measures. Further detail of our analysis for each outcome is provided in Annex 3 of our submission.

4.2 Our Conclusions

4.2.1 The Draft Determination proposed particularly stretching outcomes relative to the Final Business Plan, some of which are beyond re-basing outcome projections to reflect our performance in recent years, particularly in the areas of:

- Leakage (total and deficit zones)
- Repeat Interruptions to Supply
- Drinking water quality
- Water aesthetics (Discolouration and Taste & Odour contacts)
- Environmental pollution incidents
- Sewer flooding
- Investment emissions

4.2.2 We agree that the areas identified by WICS are areas where customers and regulators would value further progress by 2032/33. We have therefore considered how the proposed £168m additional investment allocation could be used to support improvements in those areas, while noting that delivery of these outcomes remains dependent on the overall settlement being sufficient.

4.3 Our Recommendations

4.3.1 Following careful consideration of the proposals in the Draft Determination, Scottish Water proposes to:

- accept nine of the stretched service outcomes for 2032/33;
- extend seven metrics outcomes for 2032/33 beyond those proposed in the Final Business Plan but not as far as that in the Draft Determination as they are not achievable; and

- retain two service outcomes[10] and five carbon emission outcomes at our Final Business Plan outcome position as the Draft Determination positions are not economic, or achievable or within Scottish Water's control.

4.3.2 Table 3 below summarises the Final Business Plan, the Draft Determination and our Responses to the Draft Determination positions (including use of the proposed £168m additional investment) for each of the stretched and questioned service outcome measures (18 in total). It highlights in yellow where we accept the figure in the Draft Determination as stretching but achievable, and in white where we propose an alternative figure to be stretching and achievable.

4.3.3 Table 4 below summarises how the additional investment allocation of £168m proposed in the Draft Determination could be distributed should it be retained in the Final Determination. The rationale for this allocation is included in the individual sections of Annex 3.

4.3.4 The allocation of this investment creates a further dependency with the outcomes we are now proposing, and we show this interdependency in this annex. If this additional investment is withdrawn during the Final Determination, we expect to revise the outcomes being offered at the point of the Delivery Plan when the Baseline is established.

4.3.5 We consider that:

- Throughout the SR27 customer research, our customers have supported value-added outcomes.
- The extension of outcomes and funding could be interpreted as a bringing forward of investment that is needed in SR27 to attain outcomes sought by our customers, Independent Customer Group (ICG) and Consumer Scotland (in sewer flooding and leakage), DWQR (in water aesthetics and drinking water quality) and SEPA (in WWTW permits compliance and UIDs).
- The package of extended outcomes is across water quality, water continuity, water environment and wastewater flows and therefore well-balanced as extensions to the Final Business Plan outcomes.

4.3.6 Therefore, we consider the extension of outcomes proposed in our Draft Determination response to be stretching, achievable and in keeping with the progression from the original Final Business Plan and supported by our stakeholders for inclusion in SR27.

[10] Leakage in deficit zones and Per capita consumption – our proposed position reflects the evidence in Annex 3 on what is stretching, deliverable and within Scottish Water's control during SR27.

Table 3: Comparator of outcome positions which have been adjusted between Final Business Plan, Draft Determination and Draft Determination Response

		Final Business Plan			Draft Determination		Draft Determination Response		
Ref	**Short Description**	**Base (2026/27)**	**Position at 2032/33**	**% Change (Rounded)**	**Stretch at 2032/33**	**% Change**	**Position at 2032/33**	**% Change**	**Comment**
1.07	Total leakage (ML/d)	456	411	*10%*	385	*15.7%*	405	*11.1%*	*Extend with funding (£12m)*
1.08	Zonal leakage in deficit zones (ML/d)	233	203	*13%*	186	*20.4%*	203	*13.1%*	*Retain FBP*
1.10	Per capita consumption (PCC) (l/hd/d)	178	174	*2%*	165	*7.3%*	174	*2.2%*	*Retain FBP*
1.11	Low pressure (properties)	30	26	*13%*	20	*33.3%*	20	*33.3%*	*Accept DD*
1.12	Unplanned interruptions (properties)	7,000	7,000	*0%*	5,000	*28.6%*	5,000	*28.6%*	*Accept DD*
1.13	Minutes lost (mins)	15	15	*0%*	10.4	*30.7%*	10	*33.3%*	*Accept DD*
1.14	Repeat ITS (postcodes)	240	240	*0%*	170	*29.2%*	*221*	*7.9%*	*Extend*
1.17	Taste & odour (contacts/ pop)	0.51	0.51	*0%*	0.46	*10.2%*	0.46	*10.2%*	*Accept DD with funding (£15m)*
1.18	Discolouration (contacts / pop)	2.11	1.90	*10%*	1.33	*36.9%*	1.80	*14.7%*	*Extend with funding (£5m)*
1.21	Drinking water compliance (%fails/sample)	99.93%	99.95%	*29%*	99.97%	*57.7%*	99.96%	*42.9%*	*Extend with funding (£32m)*
1.24	Annual internal sewer flooding (No./prop)	1.57	1.48	*6%*	1.27	*18.8%*	1.27	*18.8%*	*Accept DD*
1.25	Internal sewer flooding register (No./prop)	1.47	1.47	*0%*	1.17	*20.5%*	1.17	*20.5%*	*Accept DD with funding (a proportion of the £50m)*
1.26	Annual external sewer flooding (No./prop)	10.43	11.16	*-7%*	9.52	*8.7%*	9.52	*8.7%*	*Accept DD*
1.27	External sewer flooding register (No./prop)	11.35	11.88	*-5%*	10.83	*4.6%*	10.83	*4.6%*	*Accept DD with funding (a proportion of the £50m)*
1.29	Serious pollution (EPI Cat 1/2) (No.)	8	5	*37%*	4	*50.0%*	4	*50.0%*	*Accept DD*
1.30	Total pollution (wastewater Cat 1-3) (no./length)	34.8	34.8	*0%*	31.5	*9.5%*	32.5	*6.6%*	*Extend with funding (£10m)*
1.28	WWTW permit compliance (fails/580works)	96.4%	96.4%	*0%*	96.4%	*0.0%*	96.7%	*9.5%*	*Extend with funding (£11m)*
1.32	Unsatisfactory Intermittent Discharges (No.)	862	712	*17%*	712	*17.4%*	686	*20.4%*	*Extend with funding (£33m)*

Highlighting in yellow where we accept the Draft Determination and in white where we propose an alternative outcome

Further details in relation to carbon emissions outcomes and the developing measures are contained in Annex 3.

Table 4: Proposed allocation of additional funding (£168m) across the main services.

Service	Change in outcome	Funding*
Sewer Flooding	To improve internal and external sewer flooding register positions	£50m
Leakage (total)	To reduce leakage to its sustainable economic level in SR27	£12m
Water aesthetics	To reduce both Discolouration and Taste & Odour contacts by 2032/33	£20m
Drinking Water quality	To become 99.96% compliant by the end of SR27	£32m
Unsatisfactory Intermittent Discharges (UIDs)	To increase the UIDS removals to 168 by 2032/33	£33m
Environmental pollution incidents (EPIs)	To reduce incidents in our wastewater system during SR27	£10m
Wastewater treatment works	To improve permit compliance by the end of SR27	£11m
Total		£168m

* Extra funding above Final Business Plan.

5 Question Four - To What Extent Do You Agree with Our Proposal for Capital Investment?

5.1 How We Have Reviewed the Proposal

5.1.1 To establish our response to this question we have considered the impact of the proposals on the overall balance of the Draft Determination as well as reviewing each individual proposal on its own merits. This is with a view to assessing whether Scottish Water can be confident that they allow sufficient funding for Scottish Water to be able to exercise its core functions, and to achieve the objectives set by Scottish Ministers and to meet the expectations of customers.

5.1.2 In our response below, we directly respond to the Draft Determination challenges by summarising:

- the further evidence that we are providing to support the need or outputs for specific projects and programmes;
- our views and evidence on areas of additional cost challenge;
- the further clarification we have provided to WICS in response to specific requests in the Draft Determination (e.g. asset management improvement plan); and
- our reassessment of our maintenance capital investment (AR3) needs for the returning PFI sites over the SR27 period.

5.1.3 Further details on these areas are included within Annex 4a (Capital Investment Evidence), Annex 4b (Cost Challenge), Annex 4c (AR3 Outputs), Annex 4d (Asset Management Improvement Plan) and Annex 6 (West Central Bioresource).

5.2 Our Conclusions

5.2.1 Customers have benefited from the approach WICS took in SR21 to begin a transition to increased investment to maintain the existing infrastructure, build new infrastructure to meet new demand for water and wastewater services, and improve performance.

5.2.2 We recognise that the Draft Determination seeks to continue the smooth transition towards increased investment, now and in the future. However, we do not fully agree with the Draft Determination's capital investment proposals. We recognise that WICS has broadly accepted the overall investment need, and we agree with some targeted reductions following further review. However, we do not agree with several of the capital cost challenges proposed, which we consider require further evidence, refinement or reinstatement in the Final Determination.

5.2.3 The Draft Determination allows for £7,946m of investment, and considers this at the upper end of the range of investments that could be delivered efficiently. Further analysis has been undertaken by Turner and Townsend on internal capacity and supply chain readiness against the Final Business Plan baseline of £8,093m, which has found that Scottish Water is "well positioned to deliver the SR27 capital programme", with internal capability, delivery partner capability

and market readiness all assessed positively. As requested in the Draft Determination Scottish Water's Board has signed a Delivery Capacity Board Assurance Statement to this effect which is included as part of Annex 7. The full SR27 Readiness Report, an Internal Capacity Paper and a Capacity Risk Board Summary are also provided as supporting evidence within Annex 7.

5.2.4 As mentioned in the response to Question Three, we can see the benefit of the additional allocation for investment for sewer flooding (£50m) and water quality, water continuity and water environment programmes (£118m) proposed in the Draft Determination, and have indicated where this could be invested to deliver improved outcomes in the areas customers and regulators prioritise should it be retained in the Final Determination.

5.2.5 The Draft Determination has, however, made some interventions where WICS believes that the investment is not well evidenced or where it believes there is scope for further efficiency, equating to a total of £315m difference between the Final Business Plan and the Draft Determination. We set out below the evidence that supports the need for these interventions to be reconsidered.

Evidencing the need or outputs for specific projects and programmes (Annex 4a)

5.2.6 The Draft Determination requested that Scottish Water submit further evidence in relation to specific projects and programmes to enable these to be retained in the Final Determination. Annex 4a provides the additional supporting evidence requested. In summary these are:

- Carron Valley WTW: confirming that the proposed investment is expected to increase removal of organic matter as well as address taste and odour.
- Glendevon WTW: confirming the investment needs as agreed with DWQR were linked to the microbiology, disinfection by-products and discolouration risks due to asset capability deficiencies.
- The Edinburgh, Lothians, Castle Moffat and Hopes: The project is one of a number of investment needs to address supply-demand balance deficits over the next 25 years, potentially totalling c£1bn. It is envisaged that many of these will require phased investment spanning a number of periods through an adaptive planning approach in response to the effects of climate and demographic change.
- Daer WTW: confirming that investment is required to complete the system appraisal, project investment appraisal and design development needed to identify the preferred long-term replacement solution for Daer and Camps, addressing water quality, resilience and asset risks and providing delivery readiness for implementation in SR33.
- Seafield WWTW: confirming the investment is required to plan and design future water treatment capacity needs to support growth in Edinburgh following return of the PFI-operated site in 2029, enabling delivery in SR33.

- Nigg WWTW and Persley WWTW: confirming the investment is for a delivery-ready investment proposal to address future wastewater treatment capacity constraints, with delivery of outputs in SR33.

5.2.7 As requested, additional information has also been provided to explain:

- Juniper House: We confirm further comprehensive cost benchmarking will be undertaken and shared once the scope is further developed.
- The requirement for a programme of investment to monitor and analyse Pass Forward Flow. A requirement for enhancement investment to address non-compliance may be identified and therefore may need to be prioritised within SR27. A working group has been established with SEPA to agree interim positions to support EPAS / inspection and, as we move into SR27, we would anticipate that the remit of this group will be expanded to consider Pass Forward Flow monitor deployment and performance assessment.
- The West Central Bioresource project, including a view on governance arrangements and a more in-depth assessment of how the project integrates with existing policies and plans at national, regional and local level (see Annex 6).

Additional cost challenge (Annex 4b)

5.2.8 The Draft Determination has made some interventions where WICS believes that the investment is not well evidenced or where it believes there is scope for further efficiency, equating to a total of £315m difference between the Final Business Plan and the Draft Determination, across three categories:

- Increasing the productivity improvement challenge from 0.8% to 1.0% (-£55m). As set out in detail in response to Question One and Annex 1, we disagree with the Draft Determination's approach to Frontier Shift as it assumes that an already efficient firm should be able to improve its productivity faster than the rate at which the evidence suggests the broader economy is expected to grow and is out of line with recent CMA precedent on this topic from its PR24 redetermination.
- The removal of Scottish Water's proposed labour Real Price Effects (RPEs)/ National Insurance increases (-£75m). As set out in detail in response to Question One and in Annex 1, we disagree with the Draft Determination's approach to RPEs (and National Insurance costs) as it effectively increases our on-going efficiency challenge by around a further 0.7%, despite Scottish Water demonstrating that it is broadly efficient. This approach is out of line with that of other UK regulators, such as Ofwat and Ofgem, and significantly increases the risks of Scottish Water having insufficient funding to deliver its investment programme.
- Targeted cost challenges to specific investment areas in Asset Maintenance, Enhancement and Growth (-£185m). Having carefully considered each of the specific areas we accept some of the challenges (-£53.9m) and have offered further reductions (-£32m). Having provided the evidence laid out in Annex 4b, we request a reinstatement of £99m as part of the Final Determination.

5.2.9 Annex 4b provides detailed evidence addressing each specific capital cost challenge raised in the Draft Determination.

5.2.10 In assessing the targeted unit costs our concerns are grouped into four main categories:

1. The basis on which cost adjustments have been applied is, in many instances, unclear to Scottish Water. This has limited our ability to respond effectively. This is because the expert report (prepared by WSP) is not explicit about how the proposed cost reductions have been estimated in the context of the benchmarking analysis it has carried out.
2. Misinterpretation of the unit rate derived from the Final Business Plan tables (which they were not designed to enable) resulting in inappropriate cost benchmarking comparisons.
3. Inappropriate application of benchmark derived efficiencies across whole Management Approach allocations rather than relevant components of allocations.
4. Scope challenge.

5.2.11 We also make a general point that the Draft Determination has applied the unit cost challenge efficiencies (derived from comparison to our pre-efficient costing) to our post-efficient allocations thus resulting in a double efficiency hit on our allocation.

5.2.12 We conclude that the Draft Determination unit cost challenge is unrealistic and would ultimately disadvantage customers by reducing the amount of outputs that can be delivered for the reduced allocation leading to the under delivery of outcomes.

5.2.13 Table 5 below summarises the conclusions from our analysis of each specific capital cost challenge raised in the Draft Determination.

Table 5: Summary of £185m Capital Cost Challenges and Conclusion of Our Analysis

Challenge Area	WICS Stated Applied efficiency %	WICS Reduction (£m)	SW Restored Position (£m)	Funding reduction (£m)	Position Response
MA004 Dams & Reservoirs (MIOS)	5	-14	+14	0	Rejected. WICS challenges the composition of the MIOS dataset rather than demonstrating inefficiency. Applying a programme-wide efficiency adjustment based on exclusion of selected projects is not evidenced.
MA017 WWTW Inlet Works	0	0	0	0	WICS requested further information on how the unit costs were developed which we have provided.
MA029 Property & Estates	20%	-13	+13	0	Rejected. WICS' benchmarking is not like-for-like and applies a challenge across the full Management Approach despite concerns relating principally to the offices and depots element.
MA034 Customer Meters (Smart Metering)	15%	-9	+9	0	Rejected. Scottish Water does not agree that the benchmark comparison is like-for-like and considers the challenge not

Challenge Area	WICS Stated Applied efficiency %	WICS Reduction (£m)	SW Restored Position (£m)	Funding reduction (£m)	Position Response
					reflective of the nature of this programme of work.
MA041 Lead Communication Pipes	7%	-3	+3	0	Rejected. The challenge is based on a unit rate comparison that includes non-comparable project scope, resulting in an overstated benchmark position.
MA043 Secondary Treatment Processes	10%	-11	+11	0	Rejected. Benchmark concerns relate to a small subset of cost models representing approximately 5% of programme costs. Applying efficiencies across the full Management Approach is disproportionate and unsupported
MA058 Water Pumping Stations	10%	-5	+5	0	Rejected. WICS has derived an average unit rate using Business Plan expenditure and a limited output count that does not reflect the full volume and range of interventions within MA058. The resulting comparison is not like-for-like and does not demonstrate inefficiency in Scottish Water's forecast costs. Full reinstatement of the £5m challenge is sought.
MA073 Leakage Management Equipment	10%	-4	+4	0	Rejected. The challenge is based on misinterpretation of intervention volumes and resulting unit rates. The apparent variance does not reflect the actual expenditure profile.
MA077 Carbon Capture	27%	-8	+8	0	Rejected. The challenge relies on high-level cost-per-hectare benchmarking which does not demonstrate comparable scope, delivery environment or programme requirements.
MA108 PFI Capital	0	0	0	-22	A review of PFI capital allocations has allowed a reduction in the investment projection (Daldowie AR3 -£17m and Ayrshire -£5m).
MA119 Treated Water Storage	10%	-29	+29	0	Rejected. WICS relies on benchmarking evidence that lacks sufficient transparency regarding comparator scope, normalisation and challenge derivation, preventing a robust like-for-like assessment.
MA119 Chlorine Contact Tanks	10%	-13	+13	0	Rejected. The challenge is based on assumptions regarding tank size and TWS-derived costs that are inconsistent with the underlying Scottish Water evidence and revised dataset analysis.
Daer WTW Project-Specific Challenge	Design fees	-13.4	+6	-7.4	Partially Accepted. Scottish Water recognises potential economies of scale but does not agree that a detailed-design benchmark should be applied to a broader Gate 90 development and maturation scope. A balanced reinstatement of £6m is proposed.
Allanfearn Digester Project-Specific Challenge	Scope	-19.5	0	-19.5	Accepted. Scottish Water agrees the allowance should be removed as the scope is already incorporated within the wider Allanfearn WWTW Treatment and Bioresources project, avoiding double counting.
Pathhead WWTW Project-Specific Challenge	Scope	-6	+6	0	Rejected. Scottish Water has provided the additional evidence requested, demonstrating the investment need and the maturity of the cost estimate. WICS'

Challenge Area	WICS Stated Applied efficiency %	WICS Reduction (£m)	SW Restored Position (£m)	Funding reduction (£m)	Position Response
					challenge therefore reflects a difference in the presentation of needs and options evidence, rather than any absence of investment need or weakness in the cost basis.
Infrastructure Investment		-27	0	-27	Accepted. This is not part of the primary charges model - further details on the proposed uplift in charges are available in Annex 2 – Specific Modelling and Funding Adjustments.
Service Relocations		-10	+10	0	Rejected. The SR27 allowance is a prudent and necessary provision to ensure Scottish Water can meet statutory diversionary obligations driven by Roads and Rail Authorities, with visible schemes alone potentially requiring £33m–£35m and further demand likely to emerge during the period.
Additional review of broader Aberdeen Strategy (inc Persley and Nigg WWTW)	Scope	0	0	-10	Review of the SR27 scope for Aberdeen Strategy resulting in reduced allocation
Total		**-184.9**	**+131.0**	**-85.9**	**Net reinstatement of £99m**

Further clarifications needed (Annex 4c and Annex 4d)

5.2.14 The Draft Determination requests further evidence on the forecast number of responsive maintenance interventions and inspections. Annex 4c outlines the reporting options discussed with WICS during July 2026 to improve the reporting granularity and completeness of AR3 outputs, setting out the proposed approach for this Draft Determination response, for the SR27 Delivery Plan and for a potential maturity route.

5.2.15 As agreed with WICS, for the Draft Determination Response, we have reported inspections separately from a grouped repair, refurbishment, replacement total and outputs are calculated at a Management Approach level. Whilst this is a good first step towards better representing the outputs associated with the AR3 investment of the plan, Scottish Water recognises the scale of work required to continue to break this out to provide an appropriate level of regulatory information to enable monitoring, analysis and learning for this critical investment area. AR3 output tables are included in Annex 4c as requested.

5.2.16 The Draft Determination also requested a consolidated list of actions from Scottish Water's various asset management improvement plans to allow WICS to monitor progress.[11] In TA008, our Investment Planning Technical Appendix, which was submitted alongside the Final Business Plan we set out a number of milestone commitments and actions (Annex 4d provides a table outlining

[11] WICS, Strategic Review of Charges 2027-33: Draft Determination, Section 5.4.9, p.128

these). We consider this to be a summary consolidation of the key components that will form the refreshed Asset Management Transformation Routemap. Annex 4d confirms it remains our intention that detailed work to refresh and consolidate all asset management improvement plans will be complete by and laid out in our Delivery Plan.

5.3 Our Recommendations

5.3.1 Scottish Water welcomes the focus in the Draft Determination on the quality of evidence and analysis underpinning our investment plan, which forms the basis of how we plan to meet Ministerial Objectives and deliver outcomes for customers. WICS is asked to consider the additional evidence provided which supports specific projects within our investment programme.

5.3.2 As set out in our response to Question One and in more detail in Annex 1, we believe that the Final Determination should:

- remove the additional Frontier Shift efficiency challenge, i.e. move it back to 0.8%; and
- enhance the uncertainty mechanism to cover more areas of uncertain operating costs, including Real Price Effects, changes to household growth levels and changes to cash collections from Councils.

5.3.3 Scottish Water's position on additional cost challenges is that any further efficiency adjustment must be supported by clear benchmarking evidence which shows that our costs are above those of comparator companies. They must also be applied appropriately, i.e. to the relevant portion of costs where a benchmark inefficiency has been identified. In several areas, the challenge in the Draft Determination appears to be based on post-efficient values despite the benchmarking having been undertaken on our pre-efficient unit costs, or on high-level average unit rates that do not reflect the scope, intervention mix, cost model or delivery conditions underpinning the Final Business Plan allowance.

5.3.4 In summary, we recommend that the Final Determination makes the following adjustments as detailed in Table 6 below.

Table 6: Final Determination Adjustment Recommendation

Challenge to the capital programme	Draft Determination adjustment (-£315m)	Proposed Change for Final Determination
Frontier shift efficiency challenge	Increased from 0.8% per year to 1.0% (equates to £55m)	Reduce to 0.8% per year (reinstate £55m)
National insurance (NI) costs	£15m removed from allowed costs	Reinstate £15m of NI costs to the capital programme
Real Price Effects	£60m of labour RPEs removed from allowed costs No cost provision made for other RPEs (energy, materials etc). WICS has indicated any RPEs to be addressed via the Investment Planning and Prioritisation Framework (IPPF) process, i.e. via changes to the investment programme	Provide for labour, energy and materials RPEs via a combination of an uncertainty mechanism of +/-0.5% per year and the IPPF process, i.e. changes to the investment programme. See Question 2/Annex 1 & Annex 9b materials.

Challenge to the capital programme	Draft Determination adjustment (-£315m)	Proposed Change for Final Determination
Disallowance of £185m capital	Enhancement and Growth (-£75.9m) - Daer (-£13.4m) - Allanfearn (-£19.5m) - Pathhead (-£6m) - Infra Investment (-£27m) - Service Relocations (-£10m)	Reinstate £22m - Daer – restore £6m - Allanfearn – accept removal - Pathhead – restore £6m - Infra Investment – accept removal - Service Relocations – restore £10m
	Specific unit cost challenges in Management Approaches (-£109m)	Reinstate £109m of costs
Further Adjustments	AR3 investment on returning PFI assets – No adjustments made but Draft Determination indication this may be revisited Query on scope of Persley and Nigg WWTW	Reduce allocations by £32m - Daldowie (-£17m) - Ayrshire (-£5m) - reduce allocation (-£10m)

6 Question Five - To What Extent Do You Agree with Our Proposal for Operating Expenditure?

6.1 How We Have Reviewed the Proposal

6.1.1 We have reviewed each of the proposed adjustments in the Draft Determination on its own merits, as well as considering the overall level of efficiency challenge set for Scottish Water for the SR27 period in the context of its current level of operating cost efficiency as benchmarked against English and Welsh water companies.

6.1.2 Along with considering the frontier shift, Real Price Effects and National Insurance costs assumptions set out in the Draft Determination, we have considered:

- the opex benchmarking undertaken and how WICS has interpreted the results of that benchmarking (see Annex 5a);
- the approach to setting an operating cost allowance for returning PFI assets (see Annex 5c);
- the assumed level of bad debt costs / cash collections from Councils, in light of new evidence in this respect (see Annex 5b); and
- a number of other, smaller operating cost adjustments including, energy (commodity) cost increases, RBMP3-related chemical cost increases and the indexation of PFI contract costs (see Annex 5d).

6.1.3 In addition, we have provided the evidence requested by WICS to support an increase in energy non-commodity costs that we included in our Final Business Plan (also in Annex 5d).

6.2 Our Conclusions

6.2.1 We have provided evidence to show that the Draft Determination provides an insufficient allowance for Scottish Water's reasonable operating costs and expenditure. This is likely to result in Scottish Water having to reduce materially its capital programme over the SR27 period with a consequent reduction in the outcomes that customers say they want to see delivered. Detailed analysis and evidence is provided in Annex 5a on Operating cost benchmarking, Annex 5c, which specifically addresses the PFI Cost Adjustment, Annex 5b, which addresses an arising bad debt / cash collection issue and Annex 5d, which addresses the other operating cost adjustments set out in the Draft Determination.

On-going efficiency challenge

6.2.2 As set out in our response to Question One above and in more detail in Annex 1, while we recognise that it is appropriate for a regulator to set an on-going efficiency challenge to even the most efficient businesses, we do not agree that the overall level of on-going efficiency challenge on operating costs arising from the Draft Determination’s positions on frontier shift efficiency, Real Price Effects and indexation for inflation is reasonable. We consider that an effective on-going efficiency challenge of around 2% per year for an efficient business is

unsupported by evidence, significantly out of line with generally accepted regulatory practice in the UK and risks compromising Scottish Water's ability to exercise its core functions and the delivery of outcomes consistent with achieving the Ministerial Objectives:

- The most recent and most relevant precedent in terms of the level of frontier shift challenge comes from the CMA's PR24 redetermination, where it decided that the economic evidence supports a frontier shift challenge of 0.7% for water companies. These findings from the Scottish water industry's appeal body should be given due weight.
- Table 7 below sets out recent treatment of inflation and Real Price Effects from UK regulators. This highlights the extent to which WICS is out of line with current regulatory thinking.

Table 7: Recent treatment of inflation and labour RPEs from UK regulators

Regulator, Review	Year	RPE
WICS, SRC27	2026	CPI + 0% (provisional)
Northen Ireland Utility Regulator, RP7	2024	CPIH + 1.0%
Ofwat, PR24	2024	CPIH + 0.7%
Ofgem, RIIO-GD&T3	2025	CPIH + 0.1% to 1.5%
CMA, PR24	2026	CPIH + 0.7%

PFI operating costs – significant area of challenge

6.2.3 The Draft Determination has reduced Scottish Water's returning PFI operating cost allowance from £391m to £291m over the SR27 period. This £100m adjustment was based primarily on econometric benchmarking of wastewater and bioresource opex against English & Welsh water companies, with WICS also noting:

- Observed cost reductions from previously returned PFI sites (Highland & Aberdeen) of c.50% versus PFI service fees; and
- Evidence of current cost of sites in PFI partner company statutory accounts.

6.2.4 We agree with the broad approach to benchmarking the costs for our returning PFI sites and recognise the forecast level of operating costs are above the longer-term efficient level. However, the approach in the Draft Determination assumes that this level of efficiency can be achieved at site handover. In reality, Scottish Water will be tied into the operating models chosen by PFI partners for sites, at least until it can deliver capital investments that allow them to move to a more efficient model. For example, at Daldowie, we will need to operate the gas driers, with the associated considerable energy costs, until the new West Central Bioresource site has been commissioned. Similarly, at Dalmuir, we will need to continue incurring significant chemical and staff costs to operate that site due to the design choices that were made when the site was built. It is therefore not reasonable to assume that the efficient level of operating costs

can be achieved immediately from the point of PFI return. Instead, an allowance should be made for the reasonable costs of operating the actual sites we have as they are, with a glide path to the efficient level of costs.

6.2.5 Our investment in West Central Bioresources is key to realising greater operating cost efficiency at both Daldowie and some of our other PFI sites. We have, therefore, reviewed our latest business case (Gate 70) for West Central Bioresources to identify potential operating cost savings. Once the site is fully operational, we believe that we should be able to achieve a combination of operating cost reductions and incremental revenue of around £21.7 million per year, which is in line with WICS' efficient benchmark across all returning PFI sites. These savings can be made incrementally from August 2031 onwards, assuming the West Central Bioresources project is delivered on time and were not included in our Final Business Plan due to uncertainty over the timing of them given the size and complexity of the project. Overall, therefore, we estimate that it would be reasonable for WICS to apply an operating cost challenge of £27.1 million to our forecast operating costs for the returning PFI sites over the SR27 period (with these savings applying to the last year and a half of the period). Full details of how these savings have been estimated are set out in Annex 5c.

6.2.6 Up until August 2031, however, we believe that WICS should allow Scottish Water to recover the actual costs that it is likely to incur in operating these sites. We highlight that once the analysis contained in the Draft Determination is corrected to take into account costs relating to these sites that Scottish Water rather than our PFI partners were incurring (even prior to the sites transfer to us), our forecast operating costs are comparable to those incurred by our PFI partners.

Operating cost benchmarking and energy catch-up efficiency challenge

6.2.7 While we broadly agree with the assessment of our operating efficiency as set out in the Draft Determination, we believe that a more appropriate approach to allowing for the increased costs we face from operating a large number of small water treatment works (due to the distribution of Scotland's population) demonstrates that we are even more efficient than the upper quartile benchmark used by WICS. We note that this is important context in which to consider the Draft Determination's increased on-going efficiency challenge as well as a specific cost challenge it imposed on energy costs.

6.2.8 The Power Purchase Agreement Scottish Water entered at the start of SR21 comes to an end in 2027, with Scottish Water forecasting a £10 million increase in energy costs from 2027/28 onwards as a result of the business needing to purchase energy at market prices going forward. In the Draft Determination, £3.5 million per year (or £21 million over the SR27 period) has been disallowed in relation to increased energy commodity costs that Scottish Water will incur due to higher market prices.

6.2.9 We do not agree that this approach is reasonable as it effectively imposes a catch-up efficiency challenge on a business that continues to reach upper

quartile efficiency even when the full £10 million increase in energy costs is included, i.e. pushes Scottish Water to move beyond upper quartile opex efficiency. As set out in Annex 5a and Annex 5d, we believe this adjustment is based on flawed reasoning on the part of WICS.

Bad debt costs / cash collection of billing

6.2.10 In the Draft Determination, WICS has suggested a small change in the bad debt charge to reflect the logic adopted in the Final Business Plan, adjusted for the lower assumed level of revenues. In response to this adjustment, we reviewed our bad debt charges and identified that we should refresh the forecasts around the rate that Scottish Water expects to receive cash from local Councils, which in turn impacts upon the cash that we expect to have available to invest in the SR27 period.

6.2.11 Recent history had shown an improving outlook on overall collection, however, our latest collection data highlights falling first year collection rates, coinciding with larger customer price increases, and consequently near-term collection indicators appears to be deteriorating. Therefore, the overall cash collection shortfall is likely to worsen.

6.2.12 Our analysis indicates that a further £81 million allowance may be required to cover these costs over the SR27 period. We provide further explanation of this point, as well as supporting evidence, in Annex 5b.

Other operating cost adjustments

6.2.13 The Draft Determination provides an insufficient allowance for a number of other, smaller operating costs, including RBMP3-related chemical costs, and on-going PFI contract costs, which should be indexed to RPI until 2030 and CPIH thereafter, rather than CPI throughout, as WICS assumes. These are also addressed in more detail in Annex 5d.

6.3 Our Recommendations

6.3.1 In relation to operating costs, we have a number of recommendations for the Final Determination:

- Return to a frontier efficiency challenge of 0.8% pa as previously recommended.
- Provide for Scottish Water's expected actual costs on the returning PFI assets – as set out in the forecasts included in our Final Business Plan – until mid-2031 as the business does not have the opportunity to make material savings before then due to design decisions made by our PFI partners. From this date, we believe it would be reasonable to reduce our operating cost allowance for the returning PFI assets to reflect the cost savings that we expect to be able to achieve from the West Central Bioresources investment. This would result in a reduction in returning PFI operating costs of £27.1million over the SR27 period as a whole, with these being achieved in the last year and a half of the regulatory period.

- Provide the full allowance for the £10 million forecast increase in energy costs from 2027-28, as well as reinstating a further £4.6m of costs in relation to RBMP3 chemicals.

6.3.2 Furthermore, as set out in our response to Questions One and Two, we believe that WICS should introduce an expanded uncertainty mechanism into the charge control, with this mechanism allowing for up to a +/-0.5% increase in charges in any given year for the last 4 years of the SR27 period, with further cost pressures above this level being tracked and addressed through adjustments to the capital programme (via the Investment Planning and Prioritisation Framework process). This mechanism should include an allowance for any net increased working capital requirements arising from changing rates of customer cash collection over the SR27 period.

7 Question Six - To What Extent Do You Agree with Our Proposal to Introduce a Conditional Charge Cap?

7.1 How We Have Reviewed the Proposal

7.1.1 The response to this question focusses on the conditional charge cap in relation to West Central Bioresources, we have outlined our considerations of the 0.3% uncertainty mechanism, and how we believe uncertainty mechanisms should be used, in response to Question Two on customer protections.

7.1.2 The Draft Determination sets out to protect customers from the following risks in relation to the West Central Bioresources project:

- The risk that, during the development of the project, costs escalate to a point that the project is no longer in the customers' interests; and
- The risk that, if the project is delayed then the allocated funding may either be used to fund other investments or to cover cost over-runs, leaving customers potentially "paying twice" for the project due to further funding being requested in SR33.[12]

7.1.3 The West Central Bioresources project has a forecast cost of around £560 million in SR27 and is the largest single project since Scottish Water was established in 2002. It will serve around 3 million people by processing bioresource from over 270 wastewater treatment facilities using advanced anaerobic digestion technology. This will replace old systems, cut emissions, recover energy and ensure regulatory compliance.

7.1.4 The Draft Determination proposes a conditional allowance and conditional charge cap, with the West Central Bioresources element of the charge cap (on an assumed 60:40 borrowing-to-charges split, with around £225 million funded from customer charges, and around £335 million of borrowing attached) applies only in the final three years. WICS also considered, and accepted as reasonable, Scottish Water's decision not to deliver WCB through a Mutual Investment Model.

7.1.5 The conditions include a final investment appraisal confirming scope, cost and outcomes, completion of the environmental impact assessment and necessary consents, and addressing the outstanding requirements of the Scottish Ministers' policy position. The Draft Determination states that Scottish Water has met the majority of requirements but that several areas require further evidence, therefore further information on the proposed governance model and integration with existing policies and plans at the national, regional and local level have been provided in Annex 6.

[12] Draft Determination, para 8.3.7.

7.2 Our Conclusions

Conditional charge cap for West Central Bioresources

7.2.1 We are concerned that the Draft Determination's proposals for a conditional charge cap in relation to the West Central Bioresources (WCB) project creates a significant degree of funding uncertainty, and may delay the delivery of, and increase the costs of, this flagship project.

7.2.2 The conditionality mechanism creates significant planning and delivery uncertainty for a project of the scale noted above. We are also concerned that the proposal contains a potential circularity: Scottish Water may be unable to commit to procurement without funding certainty, but unable to evidence costs without procurement. If the conditional charge cap is too narrowly drawn or too difficult to trigger, Scottish Water could bear construction cost risk beyond its reasonable control, increasing the costs of the project.

7.2.3 Furthermore, any delay to the delivery of the project, which may be caused by the design of the conditional charge control, will reduce the operating cost efficiencies that Scottish Water is able to achieve during SR27, with consequential impacts on capital available to invest in the rest of the programme.

7.2.4 Finally, we note that by making £225 million of our funding contingent on proceeding with the West Central Bioresources project, if this is not commenced in SR27 (for reasons either in or out of Scottish Water's control) this funding will be removed as opposed to reprioritised via the Investment Planning and Prioritisation Framework (IPPF) process. This is contrary to customers' desire for smooth and steady price increases, and will create future funding shortfalls as West Central Bioresources will need to be managed on top of other future investment priorities in SR33.

7.2.5 We therefore do not agree with WICS that there should be a conditional charge cap for the West Central Bioresources project. As mentioned previously, additional evidence in relation to this project is in Annex 6.

7.2.6 In summary, we believe that the conditional charge cap for West Central Bioresources is unnecessary:

- in terms of protecting customers;
- because it undermines the aims of i) having a dynamic investment programme and ii) ensuring a smooth profile of increasing investment over time to protect future customers from significant step changes in charges with the associated equity concerns; and
- as the process set out for the conditional charge cap risks introducing planning and delivery uncertainty to the project, with potential impacts on overall costs.

Protecting customers

7.2.7 As we have described previously, Scottish Water's Board already discharges its duties to ensure customers receive excellent services and value for money. Moreover, Scottish Water does not pay dividends to shareholders and operates tightly circumscribed performance related pay schemes. Scottish Water has neither the incentive nor the means to divert funds intended for investment, to purposes that do not benefit our customers.

7.2.8 We also provide WICS and other stakeholders with a high level of transparency over our financial performance and investment programme, as well as a specific mechanism (the IPPF) to discuss how investment should be re-prioritised if required.

Dynamic investment

7.2.9 We are concerned that by making around £225 million of funding contingent on this specific project, the Draft Determination effectively reduces the flexibility of Scottish Water's investment programme, as this means that specific funding cannot be repurposed during the period even if all stakeholders were to agree that it is in the best interests of customers or the environment that funding be delayed.

7.2.10 We do not believe our customers are ever at risk of paying twice for the same investment. The dynamic investment planning approach may result in the re-prioritisation of projects but this means that customers receive something different in return for the funding they provide, with Scottish Water actively consulting its stakeholders to ensure that this alternative investment should be at least as beneficial to customers, communities and the environment, if not more so, than the original proposed investment. Scottish Water is under a general duty to use its resources economically, efficiently and effectively.

7.2.11 With respect to concerns raised in the Draft Determination about Scottish Water using funds to cover cost over-runs elsewhere, we note that if this were to happen, it would be clear through our performance reporting to WICS and other stakeholders that this has happened, and we would expect the resulting reputational impacts. We do not believe that having funding for the West Central Bioresources project contingent on meeting specific conditions associated with that project, reduces the risks of cost over-runs on unrelated projects.

7.3 Our Recommendations

7.3.1 We do not agree that there should be a conditional charge cap for the West Central Bioresources project.

7.3.2 We have considered Draft Determination feedback on the governance and assurance arrangements for West Central Bioresources and agree that the route to the next major investment decision should be made more explicit. In Annex 6 we have provided further information in relation to the governance arrangements of this project, including providing clarity that the Investment

Decision Maker function is discharged through Scottish Water's Board's established approval route, with named roles beneath the Board providing clear ownership for delivery, assurance, evidence closure, escalation and reporting, but not displacing the Board's ultimate investment authority. Stakeholders will be updated through the Water Industry Investment Group, with a standing West Central Bioresources agenda item to report progress as the programme moves towards Gate 80/90. An Independent "Red Team" will also be stood up with external experts who will scrutinise the Gate 80/90 plan before Board approval.

7.3.3 In addition, we have also provided a more in-depth assessment of how the West Central Bioresources project integrates with existing policies and plans at national, regional and local levels, including against Scotland's current Infrastructure Investment Plan (IIP), planning policy, National Planning Framework 4 (NPF4), Regional Economic Strategy, Local Development Plan and wider national policy connections including the UK Climate Change Committee advice.

7.3.4 We propose that the proposed performance and delivery monitoring mechanisms and the Investment Planning and Prioritisation Framework provide adequate protection to customers from the risks identified in the Draft Determination in relation to the West Central Bioresources project.

8 Question Seven - To What Extent Do You Agree with Our Proposals for Monitoring Scottish Water's Performance Over SR27?

8.1 How We Have Reviewed the Proposal

8.1.1 We have reviewed WICS' proposals for monitoring our performance as set out in section 10 of its Draft Determination. We believe that the flexibility with respect to investment planning and prioritisation that was introduced in SR21 and that WICS is proposing to continue into SR27 is useful in helping to deliver the best outcomes for our customers as it allows for changes to be made to the investment programme in response to new information and priorities. However, it cannot repair the consequences of systemic underfunding which could only result in a diminution of the outcomes that customers would otherwise receive.

8.1.2 Over the last year we have been working with WICS and other stakeholders, where appropriate, to review the Investment Planning and Prioritisation Framework (IPPF) to ensure that it, and the associated reporting to the Water Industry Investment Group (WIIG), is fit for SR27. In addition, we are working with WICS to agree the detail of the Delivery Plan and Annual Return tables for the SR27 period.

8.1.3 Though engagement in the Investment Planning and Prioritisation Framework, the Delivery Plan and Annual Return for SR27 it is essential to find the right balance of reporting burden. Producing the information required by WICS and other stakeholders to monitor the progress of investment and manage changes to the investment programme is important, but this shouldn't become overly onerous on Scottish Water. The reporting and change requirements must not risk creating delays to the investment programme and needs to be cognisant of the costs and administrative burden of data provision and reporting which are ultimately borne by customers.

8.1.4 Scottish Water operates under the principles of Ethical Business Practice and Regulation, providing a high-level of transparency to stakeholders and customers on its operations and decision-making. We propose to continue providing significant information on large projects and regulatory commitments through SR27 to allow our regulators and the Scottish Government to understand what we are delivering and how.

8.2 Our Conclusions

Flexible investment prioritisation

8.2.1 In response to a Scottish Water clarification question, WICS has indicated that the Investment Planning and Prioritisation Framework process could be used to address uncertain costs that come about but which were not reflected (ex ante or ex post) in the Draft Determination. We accept this position, and believe that the Investment Planning and Prioritisation Framework, the oversight of the Water Industry Investment Group and associated formally agreed rules-based change process should be used as one of the uncertainty mechanisms to manage the risk of insufficient funding being provided for investment should

cost pressures arise. In addition to this process being used to ensure that Scottish Water is able to respond to changing priorities and adjust its investment programme to maximise the benefits to customers, taking into account the expert advice of its key stakeholders.

8.2.2 The formal agreement of this rules-based framework will require strong governance steps as they can effectively re-set outcome targets (for example) to reflect changes to the investment programme.

Performance-related pay

8.2.3 We broadly welcome the Draft Determination's proposed principles for Scottish Water's performance-related pay (PRP) framework. However, we would highlight the following points.

8.2.4 It was previously agreed with WICS and the Scottish Government that it is beneficial for Scottish Water to have variable pay schemes in order to motivate employees and support successful delivery for customers. To do this, it is important that any variable pay approach creates a genuine incentive. To do so, it must balance providing employees with stretching goals linked to customer priorities, with a credible prospect of these being achieved.

8.2.5 In this context, we are concerned that WICS has both proposed a broad and highly stretching set of outcome targets for the business and proposed a principle of variable pay being awarded on the basis of "outperformance of targets rather than simply achieving them"[13]. We consider that the level of stretch contained in our revised proposed targets as set out in response to Question three and Annex 3 is very significant and will represent a significant improvement in performance for customers that will require Scottish Water employees to work both hard and innovatively to achieve. We believe that it should be for Scottish Water to determine whether and to what extent its employees should be rewarded for achieving that level of performance, through the usual approval mechanisms with Scottish Government. Decisions on what is proposed here must ultimately be for the Scottish Water Board and its Remuneration Committee to make, although we welcome WICS' advice to Scottish Government on these matters.

8.2.6 Further, we would emphasise the importance of transparency, clarity and certainty for Scottish Water employees regarding the terms of our variable pay schemes if they are to motivate successful delivery of outcomes. We note WICS' statement that it plans to "make an in-the-round assessment of performance ahead of PRP payments" which "would mean confirmation of PRP payments... takes place after Annual Return submission"[14]. To the extent that WICS is proposing an element of judgement in its assessment of Scottish Water's performance and making Scottish Water's variable pay schemes dependent on this assessment, that would significantly undermine the certainty

[13] Section 10.4.5 of the Draft Determination
[14] Section 10.4.8 of the Draft Determination

of the scheme and consequently its incentive properties. Again, the final decisions on these matters should be for Scottish Water's Remuneration Committee and Board, not for WICS.

8.2.7 Finally, while a baseline will be set with the first Delivery Plan, as noted above, a rules-based framework (IPPF) will be introduced for Scottish Water to bring forward any material changes to the baseline. Annual performance-related pay will therefore be considered and confirmed against the agreed revised baseline.

8.2.8 There is a very real risk that the approach proposed in the Draft Determination means that variable pay will become a demotivator and potentially disenfranchise employees, with them feeling it has been designed to rarely enable the incentive to be realised.

8.3 Our Recommendations

8.3.1 The Investment Planning and Prioritisation Framework should be used to ensure customers are protected on price. Should additional costs outside of Scottish Water's control materialise in a way that cannot be absorbed by the proposed uncertainty mechanisms, the gap in funding should be managed through the IPPF process. Workably robust and agreed governance through a rules-based framework is needed to ensure customers and key stakeholders are satisfied with any resulting changes to outcome targets as a result of reprioritisation.

8.3.2 We welcome the continued engagement with WICS on reporting and the importance of a baseline to monitor progress against. As noted above, the reporting and change requirements must not risk creating delays to the investment programme and needs to be cognisant of the costs and administrative burden of data provision and reporting which are ultimately borne by customers.

9 Question Eight - To What Extent Do You Agree with Our Proposals for Monitoring Delivery of Scottish Water's Investment Programme?

9.1 How We Have Reviewed the Proposal

9.1.1 Scottish Water welcomes WICS' proposals to strengthen monitoring during the SR27 period. We will prepare a Delivery Plan which is entirely consistent the Final Determination before the start of the period. The first Delivery Plan will form the baseline, and we will follow the guidance WICS provides with its Final Determination, subject to any referral to the Competition and Markets Authority (CMA).

9.1.2 We will then provide an annual update to the Delivery Plan and associated tables in advance of each year showing how any changes will be managed. We will also continue to provide WICS with our Annual Return at the end of each year, reporting the outcomes, outputs and detailed investment plan completed for the year to allow WICS to reconcile the Delivery Plan for the corresponding year.

9.2 Our Conclusions

9.2.1 We agree that effective monitoring of Scottish Water's investment programme will be essential during the SR27 period. The investment programme is central to delivering the outcomes that customers value, meeting Ministerial Objectives and protecting the environment. Transparent monitoring can therefore play an important role in maintaining confidence among customers, stakeholders and regulators that investment is being delivered efficiently and in line with agreed priorities.

9.2.2 However, our agreement is subject to the monitoring framework being proportionate, outcome-focused and aligned with the Investment Planning and Prioritisation Framework (IPPF). The IPPF is the appropriate mechanism for reviewing delivery progress, considering changes in circumstances and funding, and enabling stakeholders to influence prioritisation decisions during the period. Monitoring should therefore support this process rather than duplicate it or create a parallel governance framework.

9.2.3 It is also important that monitoring recognises the reality of delivering a large, complex and long-term investment programme. Some re-prioritisation of investment will be necessary as new information emerges, costs change, regulatory requirements develop and delivery constraints arise. This should not automatically be treated as underperformance. Instead, monitoring should focus on whether Scottish Water is making well-evidenced, transparent and customer-focused decisions about how investment is prioritised to maximise outcomes within the funding available.

9.2.4 As set out elsewhere in this response, the Draft Determination includes material efficiency challenges, limited protection against real price effects and conditional allowances that may create delivery uncertainty. If these risks materialise, Scottish Water may need to re-prioritise investment to remain

within the available funding envelope. The monitoring framework should therefore be capable of identifying where delivery risks are caused by factors outside Scottish Water's control and should support constructive engagement on the implications for outcomes, timing and funding.

9.3 Our Recommendations

9.3.1 We support monitoring arrangements that provide clear visibility of progress, risks, costs and outcomes, while avoiding unnecessary duplication with existing Board assurance, regulatory reporting and IPPF governance. In our view, the most effective approach would be a proportionate framework that tracks delivery against agreed outcomes, explains material changes to the investment programme, and enables timely discussion with WICS and other stakeholders where trade-offs or re-prioritisation decisions are required.

10 Question Nine - Please Use This Space to Share any Additional Comments on Our Draft Decision

10.1 Further Information

10.1.1 WICS asked Scottish Water to provide further information on a number of areas in the Draft Determination, many of these have been answered directly in response to the consultation questions, where these have not been answered we have provided the additional information below.

10.1.2 We have covered here some important points on:

- Affordability
- Regulatory alignment with SEPA
- Strategic Environmental Assessment

10.1.3 We have also provided additional clarification on three areas: changes to process emissions factors, how we are dealing with changes to the investment planning scenario and changes in the timing of the annual charges scheme.

10.2 Affordability

10.2.1 Developing a plan that was affordable for customers was a key consideration in the development of our Final Business Plan. In response to feedback on the Draft Business Plan, we reconsidered the scale and phasing of our investment programme and made difficult choices to reduce the proposed customer charge profile from CPI+4% p.a. to CPI+3.3% p.a. This was not achieved by reducing ambition lightly, but by carefully balancing affordability for current customers with the need to maintain services, protect the environment and avoid storing up greater costs for future customers.

10.2.2 The customer evidence supports the view that the Final Business Plan struck a reasonable balance. Consumer Scotland's phase 3 research "found support for, and acceptance of, Scottish Water's Final Business Plan, which was broadly considered to be balanced and sensible by household and non-household consumers"[15]. This is important because customers were not simply seeking the lowest possible bill; they expected the outcomes associated with the plan to be delivered and were concerned that higher-than-forecast costs could put those outcomes at risk.

Our recommendation

10.2.3 In that context, we are concerned that the Draft Determination places too much weight on short-term charge reduction without sufficient protection for delivery of the outcomes customers have supported or consideration of intergenerational equity. If the funding envelope is set too low, Scottish Water may need to re-prioritise or defer investment during SR27, weakening outcomes for current customers and increasing the risk of much higher bills for future customers. True affordability therefore needs to be considered over both

[15] Consumer Scotland's Letter to WICS – Final phase 3 outcomes for SRC27 – findings – 20/4/26

the current period and the longer term, taking account of service quality, environmental performance, resilience and intergenerational fairness.

10.3 Regulatory Alignment

10.3.1 Scottish Water has been engaging constructively with both DWQR and SEPA throughout development of our response to the Draft Determination, particularly on areas where there have been changes proposed to outcome measure targets or where there appears to be misalignment on priorities. We recognise that quality regulators expect full compliance and appreciate the risk-based approach being taken.

10.3.2 We continue to work with DWQR in relation to drinking water quality metrics and appreciate the pragmatic approach to ensuring that improvements are stretching but achievable within a tight funding envelope whilst maintaining the independent regulatory duties of DWQR. We understand that DWQR are broadly supportive of the adjusted outcomes proposed in our response to the Draft Determination.

10.3.3 Conversations are ongoing with SEPA on a number of areas.

- A working group has been established with SEPA to agree interim positions to support Environmental Performance Assessment Scheme (EPAS) / inspection and, as we move into SR27, we would anticipate that the remit of this group will be expanded to consider Pass Forward Flow monitor deployment and performance assessment. Consideration should be given to the potential for the creation of a new shadow metric during SR27 that adequately reflects the new EPAS regime such that it becomes a key metric for SR33.
- We strive for full compliance operationally every day, yet the capability of our assets, the impact of third parties and the climate make this challenging. We have revised the wastewater treatment works permit compliance upwards to 96.7% following challenge from WICS and SEPA. Attainment of this target is linked to £11m of the proposed £168m additional funding to seek to identify and respond to risks to compliance earlier.
- We have undertaken work to update the number of Unsatisfactory Intermittent Discharges (UIDs) which require investment, and are now proposing to remove 168 from the register in SR27 (compared to 150 in the Final Business Plan). We have revised this to better align to SEPA's expectation that 25% of the remaining UIDs will be delivered across the period. Delivery of the updated UID outputs requires £33m of the proposed £168m additional funding provisioned for in the Draft Determination.
- WICS also set a requirement for Scottish Water and SEPA to develop and agree a river water quality measure ahead of the 2027-33 period. We do not believe this measure is required: in the development of proposed measures for SR27 Scottish Water explained that this measure is in use in England and Wales to measure progress against the WINEP (Water Industry National Environmental Programme). There is no equivalent programme in SR27. Scottish Water understands that SEPA agrees that this measure is not required for SR27.

- SEPA supports the 'Study First and Invest Later' approach but has raised concerns that SR27 does not include specific allocations for investment that may emerge from studies, such as pass forward flow compliance or implementation of the recast Urban Wastewater Treatment Directive (rUWWTD). While we have been asked whether a range of potential investment could be estimated, our experience shows this is not possible with any meaningful level of confidence. At this stage we do not know the scale, complexity or timing of any interventions that may be identified through the studies, creating uncertainty not only around the cost of future investment, but also what can realistically be developed, started or delivered within the SR27 period. For example, if 10% of pass forward flow sites required investment, costs could range from £200m to £1.3bn. However, the range of potential outcomes across different catchments is so significant that any estimate would be highly speculative and potentially misleading. Based on our experience of environmental studies in previous regulatory periods, forecasting SR27 expenditure before the studies are completed would imply a level of certainty that simply does not exist.

Our recommendation

10.3.4 There may be changes to water quality or environmental regulations, the investment required to meet regulators' expectations or new demand emerging from studies during the SR27 period. The Investment Planning and Prioritisation Framework and the Water Industry Investment Group provides the mechanism to update outcome measures and required investment – recognising that all prioritisation will require trade-offs to be made.

10.4 Strategic Environmental Assessment

10.4.1 The Draft Determination requested that Scottish Water provide further information on when it will complete the full Strategic Environmental Assessment (SEA). We have considered our approach to Strategic Environmental Assessment requirements throughout the development of the SR27 Final Business Plan.

10.4.2 A Strategic Environmental Assessment Pre-Screening was completed for the SR27 Final Business Plan in accordance with the Environmental Assessment (Scotland) Act 2005. Given the high-level strategic nature of the Final Business Plan, and the absence of project or programme-level detail, Scottish Water's view was that the plan was unlikely to result in significant environmental effects requiring a full assessment. A Pre-Screening was therefore undertaken and submitted to the SEA Gateway to provide notification of this position.

10.4.3 A similar assessment has been made by Scottish Government, determining that the Ministerial Objectives and Principles of Charging do not require consideration under the Strategic Environmental Assessment requirements.

10.4.4 As the SR27 Delivery Plan is developed, Scottish Water is applying the same approach and is in the process of completing a Pre-Screening for the Delivery

Plan. The Delivery Plan will provide further detail on how Scottish Water will deliver the outcomes and commitments set out in the SR27 Final Business Plan and Final Determination, in alignment with our legislative requirements as set out in the Water Industry (Scotland) Act 2002, Water (Scotland) Act 1980, Sewerage (Scotland) Act 1968, Water Resources (Scotland) Act 2013 and The Public Water Supplies (Scotland) Regulations 2014.

Our recommendation

10.4.5 Scottish Water will continue to comply with the requirements of the Environmental Assessment (Scotland) Act 2005, whilst also ensuring all capital investment projects during the SR27-33 period are subject to environmental due diligence and comply with all relevant planning and environmental legislation.

10.5 Changes to Process Emissions Factors

10.5.1 A material change has occurred in the wastewater process emission factors used by the water sector in the UK. These factors were adopted by the UK Greenhouse Gas Emissions Inventory from January 2026, and the UK Water Industry Research (UKWIR) Carbon Accounting Workbook used by all companies was amended in April 2026 to reflect the change.

10.5.2 Previously, it was agreed with WICS we would “fix” emission factors at 2024/25 values to manage external impacts across a range of areas thus allowing a focus on Scottish Water performance only in SR27. However, the updated carbon accounting guidance has increased process emission (nitrous oxide) carbon values by four to five-fold. This has implications for carbon outcomes in SR27 and increased the challenge of achieving Scottish Water’s Net Zero by 2040 ambition.

10.5.3 We have raised this issue with WICS ahead of our response to the Draft Determination. The impact on Scottish Water’s Net Zero 2040 ambition will be addressed through the refresh of the Net Zero Routemap (Autumn 2027 publication) and WICS are invited as an Advisory Panel member to develop this.

10.5.4 We have agreed with WICS to undertake further discussions outwith the SR27 Draft Determination process with various stakeholders, including discussions with the Scottish Government and further engagement with WICS on how this change should be managed within SR27 reporting.

Our recommendation

10.5.5 We will look to discuss and agree how this is handled with WICS and other stakeholders to maintain confidence in Scottish Water's commitment to Net Zero, while clearly communicating the additional work needed to identify and deliver process emissions mitigation measures through the Net Zero Routemap refresh to be published in Autumn 2027.

10.6 Changes to the Investment Planning Scenario

10.6.1 The Draft Determination response has not taken account of known shifts and adjustments that are happening in the Investment Planning Scenario as a result of dynamic planning of the SR21 portfolio.

Our recommendation

10.6.2 We will take account of these as part of the normal Investment Planning Scenario refresh cycle and present in fully recast Delivery Plan tables.

10.7 Changes to the Timing of Charges Scheme

10.7.1 During SR21, October CPI was used to set charges for the coming year's Charges Scheme. As a result, to meet WICS and Scottish Water governance, the earliest the Charges Scheme can be publicly released is late January of the coming financial year. Feedback from customers and Licenced Providers is they would like to know the new year's charges sooner. By using September CPI, this can bring forward the timing of the public release of the Charges Scheme to early January.

10.7.2 The change has the added benefit that it will align with the annual uplifts for various welfare benefits that are adjusted in April each year using the CPI for the previous September. This includes Universal Credit, disability benefits (e.g. PIP and DLA), Carer's Allowance, tax credits payment and State Pensions.

Our recommendation

10.7.3 Move to using September CPI for annual charge setting so that the Charges Scheme can be publicly released in early January.

Annex 1

Ongoing Productivity Growth and Real Price Effects

Contents

1 Introduction....3
2 Ongoing Productivity Growth and Real Price Effects....4
3 Concluding Remarks....15

1 Introduction

1.1 Scottish Water recognises the importance of setting a stretching efficiency challenge and ensuring that customers fund only efficient and necessary costs. This annex provides further evidence on the appropriate calibration of ongoing productivity growth and the treatment of real price effects. Our objective is to support a Final Determination that is evidence-based, deliverable and appropriately protects customers against both overfunding and underfunding.

2 Ongoing Productivity Growth and Real Price Effects

2.1 Summary

2.1.1 This section deals with the assumptions that WICS has made when rolling Scottish Water's efficient costs forward to the end of the SRC27 period.

2.2 Productivity Improvement

2.2.1 WICS' Draft Determination allows first of all for a level of annual efficiency savings. Consistent with standard regulatory practice, this efficiency challenge is set in line with the underlying rate of productivity growth that WICS considers the most efficient water companies ought to be capable of achieving over the SR27 period.

2.2.2 In our business plan, we estimated this rate of 'frontier shift' to be 0.8% per annum. This figure was based on our reading of historical benchmarks and our understanding of the latest macroeconomic data and forecasts.

2.2.3 WICS' Draft Determination provides for ongoing productivity growth of 1.0% per annum. WICS explains that its higher figure takes account of Scottish Water's track record of cost reduction during the SRC21 regulatory period. WICS also states that it considers that Scottish Water "should be able to outperform the average firm in the economy, recognising that it benefits from a stable and predictable regulated revenue stream and from delivering a large investment programme, including significant investment in digital technologies such as artificial intelligence".

2.2.4 Table 1 compares WICS' estimate to the ongoing efficiency assumptions used in other recent price reviews.

Table 1: Productivity growth assumptions

Regulator, review	Year	Ongoing efficiency
WIC, SRC27	2026	1.0% (provisional)
WIC, SRC21	2020	1.0%
CAA, H7	2023	1.0%
NI UR, RP7	2024	1.0%
Ofwat, PR24	2024	1.0%
Ofgem, RIIO-GD&T3	2025	1.0%
CMA, PR24	2026	0.7%

2.2.5 The table highlights a good degree of consistency in regulatory thinking up until the start of this year. The consensus among regulators has, however, been broken by the recent ruling from the Competition & Markets Authority (CMA) in the appeals by water companies against Ofwat's most recent price control decision. In this determination, the CMA found that it was necessary to lower the hitherto 'standard' 1.0% per annum productivity growth target to a lower figure of 0.7%.

2.2.6 The CMA's recalibration of expectations is first and foremost a response to the slow rate of productivity growth that we have seen across the UK economy since the global financial crisis. In its written decision document, the CMA explains that a regulator needs to be cognizant of the headwinds impacting costs and must moderate assumptions about ongoing efficiencies in line with the general downgrading that there has been in forecasts of the economy's productive potential.

2.2.7 The evidence and detailed reasoning to justify this move can be summarised as follows.

2.2.8 First, Figure 1 reproduces the ONS' estimates of multi-factor productivity growth for the market sectors in the UK economy over a 50-year period. The chart shows a clear structural break in the trend rate of productivity growth starting in 2008.

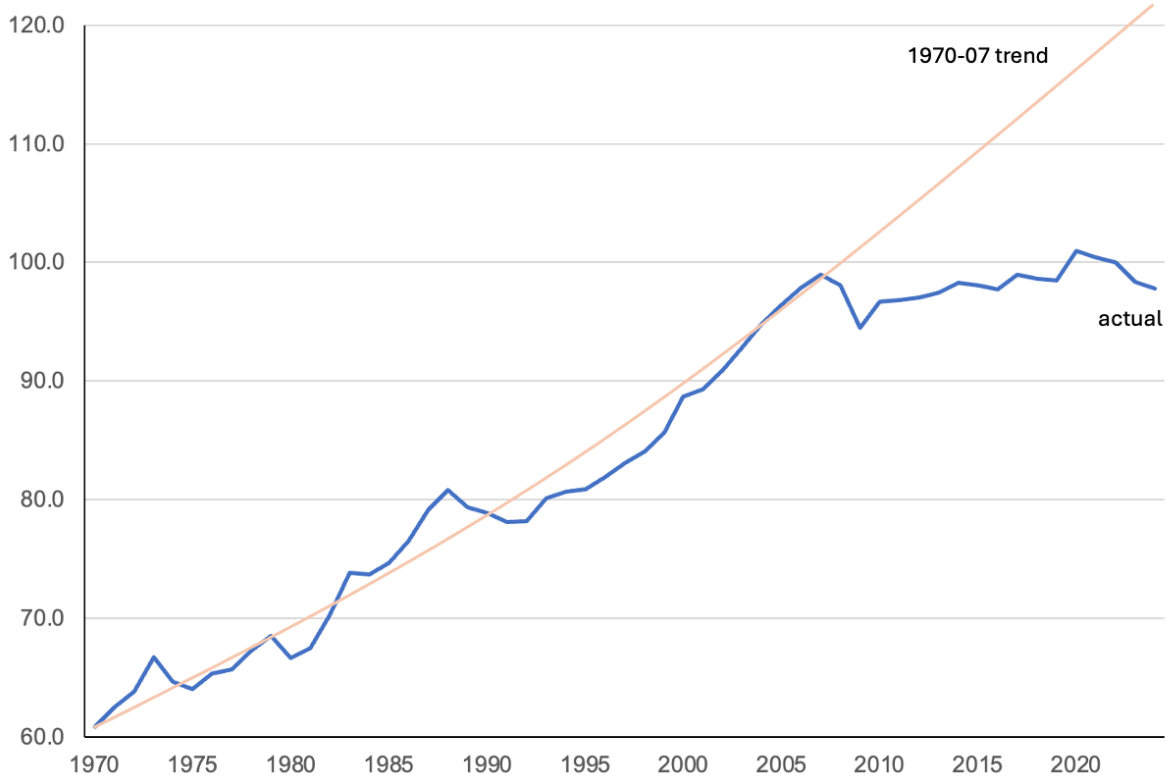


Figure 1: Multi-factor productivity growth

Source: ONS (2025), Growth accounting, multi-factor productivity estimates.

2.2.9 Second, more granular industry-level data provides clear evidence of a slowdown in productivity growth in the sectors of the economy where the nature of work being carried out is most similar to the activities that a regulated network company engages in in the course of its business. Table 2 sets out the EU KLEMS benchmarks that CEPA identified in an expert report commissioned by Ofwat during PR24.

Table 2: Total factor productivity gross output estimates (average annual growth rate)

Industry	1996-2008	2009-19	1996-2019
Chemicals and chemical products	1.8%	2.5%	2.1%
Construction	(1.0%)	(0.2%)	(0.4%)
Machinery and equipment n.e.c.	1.9%	(0.8%)	0.9%
Manufacture of furniture; jewellery, musical instruments, toys; repair and installation of machinery and equipment	1.4%	(0.2%)	0.9%
Professional, scientific, technical, administrative and support service activities	(0.5%)	(0.3%)	(0.3%)
Total manufacturing	1.6%	0.4%	1.1%
Transportation and storage	(0.2%)	(0.8%)	(0.3%)
Unweighted average	**0.7%**	**0.1%**	**0.6%**

Source: CEPA (2024), PR24 final determinations frontier shift.

2.2.10 Table 2 and Figure 1 together show very clearly that the slowdown in productivity growth has not been confined to particular industries and has not been a passing phenomenon. It is, instead, a major structural shift that materially changes the picture that regulators have in the past been looking at when they were required to form assumptions about the savings that regulated companies are capable of delivering.

2.2.11 Third, Table 3 summarises the Office for Budget Responsibility's (OBR's) and Bank of England's (BoE's) projections for future productivity growth.

Table 3: OBR and BoE total factor productivity growth forecasts

	2025	2026	2027	2028	2029	2030
OBR	0.4%	0.3%	0.5%	0.6%	0.7%	0.8%
BoE	-	0.2%	0.3%	0.3%	-	-

Source: OBR (2026), Economic and fiscal outlook, March 2026; BoE (2026), Monetary policy report, February 2026.

2.2.12 These data points are important because they highlight that expert forecasters are not expecting a return to the pre-2008 rate of productivity growth in the near term. The latest OBR and BoE forecasts foresee some improvement relative to the recent flat-lining of productivity growth, but both organisations' numbers fall well short of a 1.0% per annum run rate.

2.2.13 We note that the measure of productivity in all of the above charts and tables is total factor productivity growth. This is the correct benchmark to apply when 'frontier shift' assumptions are being applied to regulated companies' total expenditures. We note that WICS makes reference in its Draft Determination to

labour productivity data and forecasts (i.e. measures of output per hour worked). These are potentially useful benchmarks when considering only a firm's labour costs. However, labour productivity measures are not an appropriate standalone basis for estimating the annual rate of change in total operating expenditure and capital unit costs, because they do not capture productivity across the full range of inputs included within a totex assessment.

2.2.14 Fourth, the CMA showed that water companies are not immune from the factors weighing on productivity growth in other sectors of the economy. The CMA identified, in particular, that out-turn productivity growth across the England & Wales water companies had been close to zero in most years between 2013 and 2024. The CMA also rejected arguments that regulated firms are somehow insulated from wider trends in the economy, finding that economic regulation should not be viewed as something that creates conditions that can cause monopoly companies to consistently out-perform the trend rate of productivity growth in sectors of the economy where firms compete against each other for market share and growth.

2.2.15 Fifth, the CMA also considered arguments that regulators' allowances for capital investments, particularly IT projects, differentiate regulated companies from other firms. The CMA identified that a significant portion of future regulated industry investments are expected to produce benefits in the areas of service quality, environmental performance and resilience rather than cost efficiency per se. The CMA also noted that the forecasts in Table 2 above incorporate up-to-date central-case assumptions about the benefits that AI and other new technologies will have across the economy, and did not identify any reason to think that regulated networks are inherently more likely to benefit from progress in these areas in comparison to firms in other sectors.

2.2.16 We consider that the above body of evidence and arguments are directly and equally relevant to the expectations that one should reasonably have about the annual efficiency savings that Scottish Water is capable of achieving through to 2032/33. This is for the following reasons:

- Scottish Water's ability to generate cost savings is constrained outside of its control by the rate of technical progress and innovation in the wider industry in which it sits. It is not plausible to think that Scottish Water, and Scottish Water alone, is capable of generating productivity improvements that exceed the underlying trend rate of productivity growth that can be achieved by other water companies or other firms undertaking the same nature of work; and

- Approximately 65% of SRC27 expenditure will be incurred within Scottish Water's supply chain.[1] The evidence from the ONS, EU KLEMS, the OBR and the BoE demonstrates very directly the productivity headwinds that our contractor partners are facing. These headwinds need to be given due weight in WICS' SRC27 calibrations, irrespective

[1] We estimate that approximately 85% of capex and 40% of opex is spent with our supply chain.

of the expectations that the regulator might have of Scottish Water as a regulated business.

2.2.17 Taking all of the above points into account, our request of WICS is that the assumptions that WICS writes in for ongoing efficiency improvement in its final SRC27 determination must be compatible with the CMA's recent PR24 decision and, more generally, with the wider macroeconomic backdrop to the SRC27 review, as set out above. The CMA is the appeals body for the UK's regulated industries and its decisions ought to be given significant weight by regulators when they are assembling their price control calculations, especially in situations where the CMA decision has (a) been issued very recently and (b) relates to the exact same industry that the regulator is regulating.

2.2.18 Our preferred ongoing efficiency assumption remains 0.8% per annum, in line with our business plan. In saying this, we acknowledge that there are reasons why it might now be appropriate to select a lower allowance (e.g. the CMA's preferred figure of 0.7%). In particular, we note that there has been a downgrading of productivity forecasts by both the OBR and BoE since we prepared our SRC27 costings in spring 2025. However, we believe that it is right that we stick to our previous target *provided that* WICS is able when it makes its final determination to incorporate the full set of cost allowances that we requested in our plan.

2.2.19 Scottish Water nevertheless recognises that innovation can support material productivity improvement. We will pursue the opportunities identified in our Final Business Plan, including improved use of data and digital tools, automation and artificial intelligence where evidenced, greater standardisation, improved asset and investment decision-making, and closer collaboration with our supply chain. Our position is not that further productivity improvement is unavailable, but that the challenge should be stretching, evidence-based and calibrated to our efficient starting point and the economic environment in which delivery will take place.

2.3 Real Price Effects

2.3.1 Scottish Water's costs will also change from year to year according to the underlying rates of price inflation in the different input markets (i.e. labour, materials, electricity, etc.) that we buy from.

2.3.2 It is standard regulatory practice, therefore, for a regulator to allow for changes in input prices when it is making its projections of efficient costs. This allowance for input price inflation can be distinguished from the allowance for productivity growth in that the former relates to changes in the price of a unit of input and the latter relates to the opportunities that there are over time to use a lower quantity of inputs to produce any given unit output. The relevant rates of input inflation are typically measured relative to consumer price inflation (hence the term real price effect or RPEs).

2.3.3 In our Final Business Plan, we estimated that Scottish Water could be expected to face RPEs on OPEX of approximately 0.5% per year, and on CAPEX of 0.7% per year over the SR27 period. We proposed that:

- An initial 0.2% pa ex ante RPE estimate is included in the OPEX and CAPEX assumptions underpinning the SR27 Final Business Plan – largely reflecting anticipated increases in labour costs in excess of CPI;
- Further RPE estimates could be included on an ex-ante basis within the WICS Final Determination, based on WICS's assessment of our RPE forecasts and analysis and/or their own calculations; or
- A methodology for calculating RPEs should be agreed so that RPEs can be appropriately considered on an ex-post basis within WICS's assessment of Scottish Water's outcome and efficiency performance during SR27.[2]

2.3.4 WICS' Draft Determination provides for a conditional allowance of 0.3% per year for the last three years of the SR27 period for future electricity price increases and potential pension costs Scottish Water may face. However, WICS does not make any further allowance for real wage inflation (or for any energy costs above this level).

2.3.5 WICS justifies its position on labour RPEs on the grounds that it "has not seen robust evidence that there has been a material difference between capital expenditure labour costs and CPI historically, or that such a difference is likely to emerge during SRC27". In particular, WICS notes that CPI inflation outpaced public-sector wage growth during both the period 2009-25 and the more recent period 2021-25.

2.3.6 Table 4 compares WICS' allowance for labour RPEs to the provisions made in other recent price reviews

[2] See Scottish Water, Final Business Plan, Technical Appendix 0012, pages 51-56.

Table 4: Labour RPE assumptions

Regulator, review	Year	RPE
WIC, SRC27	2026	CPI + 0% (provisional)
NI UR, RP7	2024	CPIH + 1.0%
Ofwat, PR24	2024	CPIH + 0.7%
Ofgem, RIIO-GD&T3	2025	CPIH + 0.1% to 1.5%
CMA, PR24	2026	CPIH + 0.7%

2.3.7 Care must be taken when comparing the entries in this table because the rate of CPI inflation (i.e. the base price index for WICS' labour RPE) is different from the rate of CPIH inflation (i.e. the base price index for the other regulators' allowances). The OBR's latest economic forecasts have annual CPI inflation running 0.1% to 0.4% slower than annual CPIH inflation, meaning that the gap between WICS' SRC27 draft decisions and the other regulators' positioning is larger than it may first seem.

2.3.8 The key driver of the difference between WICS' draft assessment and the allowances in recent price control decisions is the above-mentioned decision to benchmark pay increases to evidence on public-sector earnings growth.

2.3.9 We acknowledge that the historical differences between private- and public-sector pay is a relevant consideration for this review (the analysis feeding into our business plan also took account of historical trends in public-sector earnings). However, we consider that WICS has overstated the extent to which the rate of increase in Scottish Water's labour costs can be expected to deviate from private-sector wage rates.

2.3.10 We give first of all in the table below examples of the skill set that we will require in order to deliver our capital programme.

Table 5: List of occupations

Responsibility	Occupations
Engineering and design	Civil engineers Process engineers Mechanical engineers MEICA and commissioning engineers Electrical engineers Design technicians Surveyors
Field and site operations	Site and construction managers Construction operatives Plant operatives Electricians Technicians General labourers
Project and commercial management	Project managers Procurement specialists Risk and compliance managers

2.3.11 The markets for these types of skills are distinct and separate from the market for a typical public-sector worker. If we are to attract and retain an appropriately skilled workforce, we will need to offer pay and conditions that compare favourably to the terms that are being offered by the private-sector companies that are looking to recruit from the same pool of individuals. This unavoidably means matching private-sector wage rates, irrespective of the prevailing trend in public-sector earnings.

2.3.12 Second, to reinforce this point, we note that in 2025/26 approximately 55% of the labour costs that we incurred in our capital programme were internal staff costs and approximately 45% were costs for our contractors' workforce.[3]

2.3.13 This matters because the labour markets that our private-sector contractors are buying from are entirely distinct and separate from the market for public-sector staff. It follows that public-sector wage trends have little or no relevance to the costs we will incur in respect of a sizeable proportion of the capital programme.

2.3.14 Third, to reinforce the realities that we face as a business, Table 6 provides an internal record that we keep of the previous employments of new joiners at Scottish Water since 1 January 2026.

Table 6: New joiners' previous employment

Sector	Proportion
Private sector	66%
Public sector	14%
Self-employed / third sector / charities	8%
Internal (conversions from agency/contractor to employee)	12%

Source: Analysis of 187 new joiners to Scottish Water between 1 January 2026 and 30th June 2026

2.3.15 The data shown here is consistent with the arguments made above. Our staff are not confined to work in the public sector and, hence, if we are to retain a high-quality pool of talent, it is imperative that we are able to offer salaries that are competitive next to the alternative employment that individuals can take.

2.3.16 These considerations point very firmly away from costings that provide only for annual CPI increases in wages and towards a more considered method of building our cost allowances which incorporates appropriate recognition for the likely rate of private-sector and whole-economy earnings growth.

2.3.17 In the alternative, if WICS insists on making zero allowance for forecast private-sector earnings growth, the inevitable consequence is that we will enter the SRC27 period under-funded for the programme of work that we have been tasked with carrying out. This is in no one's best interests. As we have seen recently in England, knowingly putting a regulated business in a position where it is likely that it will overspend its budgets will mean that we fall short of our stakeholders' reasonable expectations and cause lasting reputational harm both to Scottish Water as a business and the regulatory regime.

[3] This is based on labour costs of £219million for the Capital Investment directorate within Scottish Water and our understanding that c.25% of contractor costs of £760m related to labour costs.

2.3.18 A sense of the labour RPE that we are likely to encounter can be obtained by looking at the latest forecasts for average earnings growth. Table 7 reproduces the median forecast in HM Treasury's quarterly surveys of projections, along with actual figures for 2025.

Table 7: Median forecasts of average earnings growth and CPI inflation

	2025	2026	2027	2028	2029	2030
Average earnings growth	5.3%	3.8%	3.2%	3.1%	3.0%	3.1%
CPI inflation	3.4%	2.8%	2.3%	1.9%	2.0%	2.0%

Source: HM Treasury (2026), Forecasts for the UK economy, August 2026.

2.3.19 A comparison of the two rows of the table puts labour RPEs at CPI + 1.9% in 2025 and CPI + 0.9% to 1.2% during the first four years of the SRC27 period. This is somewhat higher than the OBR's March 2026 forecast, albeit we note that the OBR's forecasting work was carried out prior to the economic shock caused by the war in Iran.

Table 8: OBR forecasts of average earnings growth and CPI inflation

	2025	2026	2027	2028	2029	2030
Average earnings growth	5.3%	3.4%	2.4%	2.1%	2.2%	2.4%
CPI inflation	3.4%	2.3%	2.0%	2.0%	2.0%	2.0%

Source: OBR (2026), Economic and fiscal outlook, March 2026.

2.3.20 Our business plan provided for a total labour RPE of 0.5% per year over the SR27 period. (Note, this was effectively a 0.2% RPE across our cost base as a whole, given that labour accounts for approximately 40% of total costs). Our reading of the above tables is that this provision is more than justified by the external forecasts of the wage pressures that we will face in our capital programme.

2.3.21 However, we recognize that the actual RPEs that we will face may vary from the above forecasts, just as the actual extent of labour RPEs in the past have varied over time. We note that WICS' findings regarding the extent of labour RPEs are driven, in part, by its focus on the 2009 to 2025 period, which incorporates a particularly slow period of wage growth following the 2008 financial crisis. Therefore, we propose that WICS should include an uncertainty mechanism in the Final Determination that makes an allowance for RPEs (labour and other) only to the extent that they are realized in the SR27 period. This avoids a situation where Scottish Water is either over- or under-funded. Further details on this mechanism are set out in Annex 9b.

2.4 National Insurance Costs

2.4.1 WICS states in its Draft Determination that it is not necessary to make allowance for changes in national insurance (NI) rates, on the grounds that

Scottish Water will be compensated via faster CPI indexation of revenues for the additional costs it faces.

2.4.2 This is not correct. The OBR analysis cited below has estimated that only around 15% of the additional costs that UK employers have been facing will feed through into price increases:[4]

> *We assume that firms pass on most but not all of their higher tax costs to employees. In 2025-26, the year it is introduced, we assume firms pass on 60 per cent of the higher costs to workers and consumers, via lower wages and higher prices, leaving 40 per cent to be absorbed by the employer in lower post-tax profits. Further adjustment takes place thereafter such that, from 2026-27 onwards, we assume, based on demand and supply elasticities for labour, that 76 per cent of the total cost is passed through lower real wages, leaving 24 per cent of the cost to affect profits. Of the long-run pass-through of this cost to employees' real wages, we assume four-fifths comes through lower nominal wages and one-fifth via higher prices.*

2.4.3 In thinking about the impact that the changes to NI employer contribution rates have on Scottish Water, it is important to understand that:

- there is no mechanism by which Scottish Water benefits from a general reduction in the level of UK corporate profits; and

- contrary to the position that WICS takes in its Draft Determination, there remains a cost to Scottish Water in respect of the proportion of NI costs that pass through into lower real wages. This is because the allowance for labour RPEs (whether nil as in WICS' Draft Determination, or positive as per Scottish Water's business plan), by design, covers net changes in workers' take-home pay, as viewed from the perspective of the employee. The analysis in the preceding section does not at any point consider or provide compensation for the increase in Scottish Water's NI bill – i.e. a completely separate line item in the SRC27 budgeting process.

2.4.4 As such, the £2.5m per annum that Scottish Water has identified is not a cost that has been properly allowed for in WICS' Draft Determination.

2.5 Other RPEs

2.5.1 Materials

2.5.1.1 The Draft Determination does not appear to make explicit provision for materials input price inflation. We consider this an important area for further assessment because materials contributes approximately one third of our total capital costs and have experienced significant real terms cost escalation in this area of our expenditure over an extended period of time. Independent corroboration for these cost pressures is given by the rapid growth in the DBT construction materials inflation index since 2014.

[4] OBR (2024), Economic and fiscal outlook, November 2024.

2.5.1.2 At the time of writing, we have no reason to think that price pressures are going to abate during the SRC27 period. Indeed, we provide WICS with a copy of a recent report prepared by Bentleys, which highlights the rates of cost inflation currently being seen in the supply chain in materials, plan and labour, see Schedule 1. We therefore consider that, as a minimum, it is incumbent on WICS to examine this cost line before it makes its final determination and we propose that it is included in an uncertainty mechanism alongside labour and energy costs.

2.5.2 Energy

2.5.2.1 Finally, we appreciate the Draft Determination's inclusion of an uncertainty mechanism in relation to energy (and pension) costs, which we understand to be recognition of the potential for RPEs in these areas (although this is not explicitly stated in the Draft Determination). However, we remain concerned that this allowance may be inadequate to address the full range of energy and other cost pressures that we may face in SR27 across both operating and capital costs. In particular, we note that the uncertainty mechanism appears to only relate to the impact of energy that Scottish Water purchases directly, i.e. opex cost, and does not allow the impact of such cost increases on the capital programme where energy costs comprise around 8% of total costs directly.

2.5.2.2 We highlight that energy cost increases have exceeded CPI substantially over the last 25 years, with particularly large effects in the SR21 period. For example, the DesNz Electricity index (industrial customers) has grown at an average annual rate of 8.1% between 2001 and 2026, compared with average CPI inflation of 2.7% per year over the same period. Between 2021 and 2026, ie the last five years covering the SR21 period, energy costs have increased at a compound average rate of 14.5% per year, compared with CPI inflation of just over 5% per year.

3 Concluding Remarks

3.1 A final consideration is the need for internal consistency between the assumptions used for productivity growth and those used for labour costs. The Draft Determination combines a stretching private-sector productivity assumption with labour cost growth benchmarked primarily against public-sector earnings. In our view, these assumptions warrant further consideration when assessed together.

3.2 Sustained productivity improvement normally requires organisations to attract and retain the skills needed to adopt new technologies, improve working practices and deliver change. Where Scottish Water and its supply chain compete for specialist capability in wider infrastructure and engineering labour markets, an assumption of CPI-only labour cost growth may not sit comfortably with a 1.0% annual frontier productivity challenge.[5]

3.3 We therefore ask WICS to ensure that the productivity, labour cost and wider RPE assumptions in the Final Determination form a coherent and deliverable package. It is in the interests of customers, Scottish Water and the regulatory framework that the final package is stretching but deliverable and does not create avoidable risks to agreed investment and outcomes.

3.4 One means of achieving this would be to provide an up-front allowance for Labour RPEs that is consistent with the stretching private-sector productivity growth challenge of 1%, i.e. to set a labour RPE based on an average view of the expectations in Table 7 above, and then make a separate allowance for expected energy and materials RPEs.

3.5 However, our preferred solution, given the uncertainty around RPEs over the period and the importance of ensuring that customers are not asked to cover costs that may not arise, is for WICS to include an expanded uncertainty mechanism that effectively provides a “true-up” during the period for the RPEs on labour, energy and materials, that Scottish Water actually faces over the SR27 period. In Annex 9b, we set out how such an uncertainty mechanism could be designed.

[5] The contrast between private sector and public sector productivity growth is shown starkly in the OBR’s recent briefing paper on forecasting productivity growth. This demonstrates that the public sector has achieved substantially zero productivity growth since 1998, whilst the private sector has achieved material productivity growth over the last 25 years. See Chart 4.8 in Briefing_paper_No.9_Forecasting_productivity.pdf

Annex 2

Specific Modelling and Funding Adjustments

Contents

1 Revenue - Household Growth Rates 3
1.1 Actuals and Current Year Forecast 3
1.2 Forecast for Remainder of SR27 Period 4
2 Revenue - Non-Household Revenue and Growth Rates 7
2.1 Actuals for 2025/26 7
2.2 Forecast for 2026/27 7
2.3 Consumption 7
2.4 Premises Growth 7
2.5 Rateable Value 9
3 Revenue - Infrastructure Charges Income 12
3.1 Part 3 Growth Investment Needs 12
3.2 Infrastructure Charge Income 13
4 Interest Expense Reduction 14
5 Reduction in Tax Paid 16
6 Other Funding - Increase in Allowed for Borrowing 18
7 Other Funding - Cash Release due to Excess Cash Held in SR21 19
8 Funding Model and Use of Borrowing from Scottish Government 20
9 Wholesale Payment Terms Review 22

1 Revenue - Household Growth Rates

1.1 Actuals and Current Year Forecast

1.1.1 Actual out-turn growth in household revenue (excluding price changes and including provisions) reported in the annual accounts for 2025/26, was 0.7% as shown below.

Table 1: Household growth rates after provisions

HH Growth	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33
Final Business plan	0.62%	0.90%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
WICS Draft Determination	0.90%	0.90%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Actual result / latest forecast	0.70%	0.57%						

1.1.2 The monthly trend in year-on-year growth in household revenue (excluding price changes) is shown below (note that this is before provisions so differs slightly from the final reported position of 0.7% for 2025/26 in the table above). Having tended towards around 1% in recent years, household growth excluding provisions dropped markedly in the latter half of 2025/26 and fell further at the start of 2026/27. On this basis, current forecast growth for 2026/27 after provisions is 0.57%.

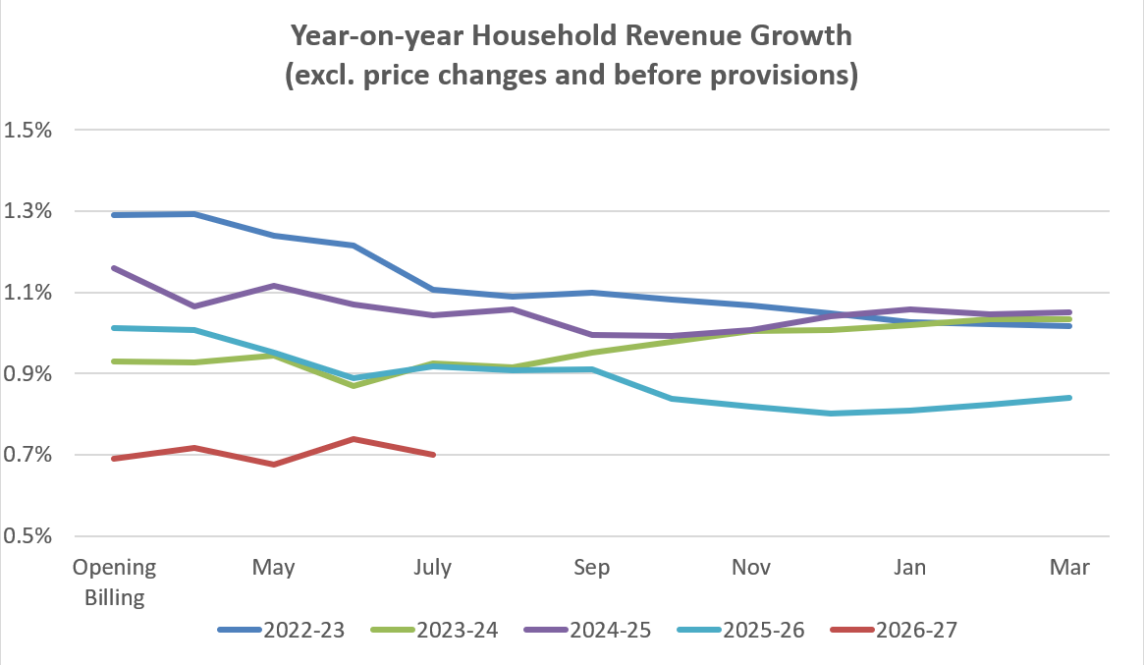


Figure 1: Year-on-year household revenue growth

1.1.3 It is proposed that the 2025/26 growth rate (after provisions) is therefore updated to 0.70% to reflect the actual year-end growth, while 2026/27 should be revised to 0.57% in line with the latest revenue forecast.

1.1.4 Absent any other changes, this reduces available funding in SR27 by £46 million (24/25 prices).

1.2 Forecast for Remainder of SR27 Period

1.2.1 For the SR27 period, the Final Business Plan and Draft Determination assumed a household revenue growth rate of 1%.

1.2.2 Over the last 12 years, the average household growth before provisions was 0.78% per annum (high of 1.05% and low of 0.67% excluding the 2021-22 year during COVID). From 2022-2025 however this rate has been around 1%, which suggested a potential new normal at a higher level and was the basis for the Draft and Final Business Plan assumptions of 1%.

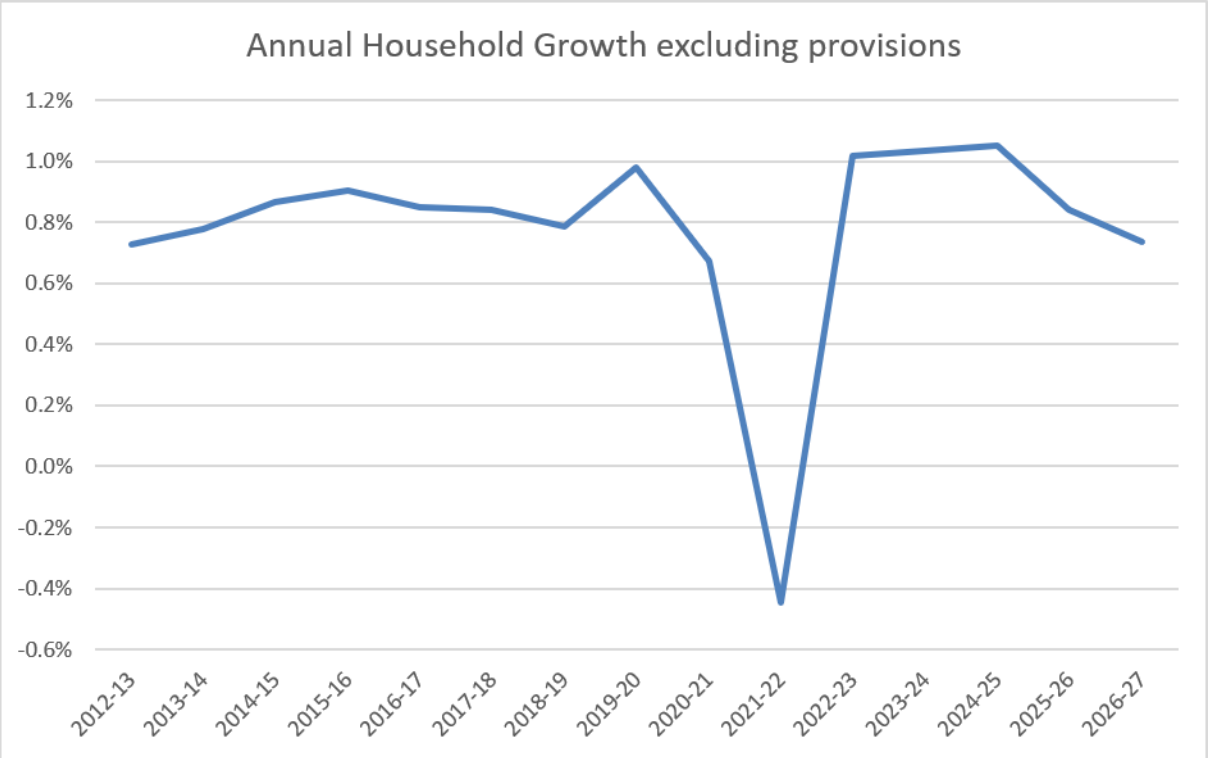


Figure 2: Annual household growth excluding provisions

1.2.3 Since summer 2025, we have seen declines in the growth rate which, 4 months into 26/27 is forecast to end this year at only 0.57%.

1.2.4 Information from various sources on the current run-rate of household connections indicate a downward trend. The most recent available NRS forecasts date back to 2022 but also suggest a downward trend.

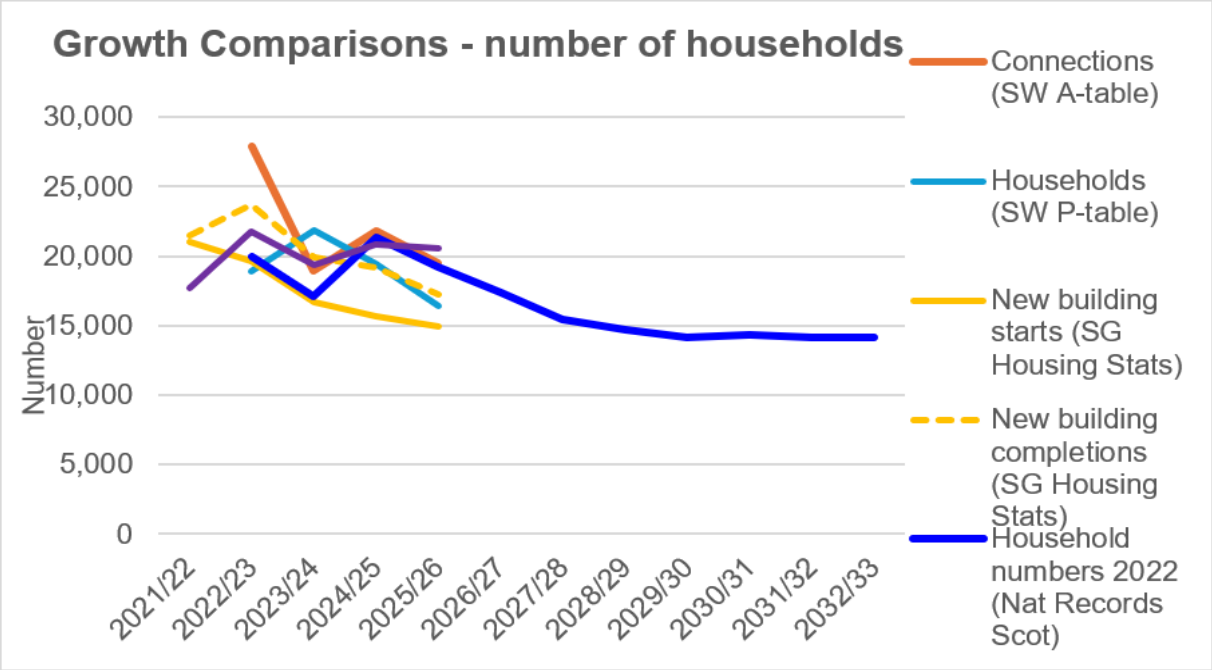


Figure 3: Growth comparison

1.2.5 The NRS 2022 forecast equates to the following % growth rate:

Table 2: NRS22 Forecast

Proposed Revised HH Growth for SRC27	**2027/28**	**2028/29**	**2029/30**	**2030/31**	**3031/32**	**2032/33**
Household numbers (Nat Records Scot from 2027/28)	0.60%	0.60%	0.50%	0.50%	0.50%	0.50%

1.2.6 The Scottish Government's *Housing Statistics for Scotland Quarterly Update* also indicates a potential slowdown in new housebuilding starts, driven by higher construction costs, affordability pressures, elevated interest rates, weaker developer confidence and funding constraints in affordable housing programmes.

Chart 1: All-sector new housebuilding starts and completions, Scotland, 2004 to 2025

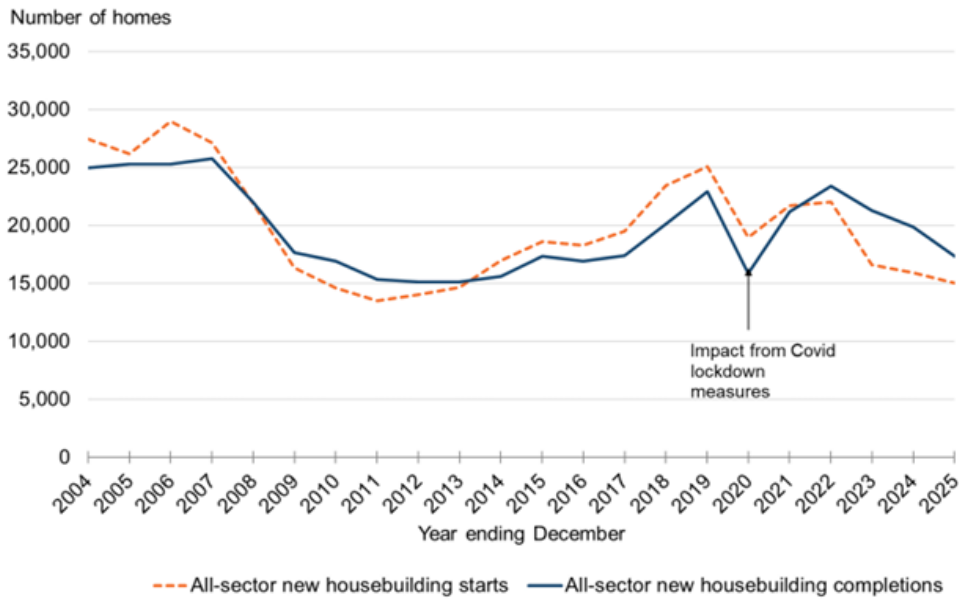


Figure 4: All sector new housebuilding starts and completion, Scotland 2024: Housing Statistics for Scotland Quarterly Update: New Housebuilding and Affordable Housing Supply to end March 2026 - gov.scot

1.2.7 In conclusion, whilst the household growth forecast for 2027/33 remains at 1%, there is some downside risk associated with this position based on recent actuals and external data related to the rate of new housebuilding. This suggests that growth at 1% in recent years may have been a post-COVID catch-up rather than an enduring run-rate. Alternative growth scenarios include 0.7% for the first 3 years and 0.8% for the latter 3 years of the 2027-33 period in line with the long-term average or, at the pessimistic end of the range, 0.6% in 2027-29 followed by 0.5% as forecast by NRS in 2022. Both of these scenario's result in less income and therefore funding (£130m less in the first scenario and £185m in the second) and with no other routes to finance, result in less available to invest.

1.2.8 Household growth therefore continues to be forecast optimistically at 1% across the 2027-33 period but it is proposed that it should be included in the uncertainty mechanism (see Annex 9b) to avoid customers bearing the risk of adverse impacts on funding and outcomes and given that the factor is outwith Scottish Water's control.

2 Revenue - Non-Household Revenue and Growth Rates

2.1 Actuals for 2025/26

2.1.1 The Draft Determination assumes 2025/26 non-household revenue which is £9.1m higher than the Final Business Plan and £9.6m higher than the actual year-end outturn, now that information is known.

2.2 Forecast for 2026/27

2.2.1 This overstated starting position for 2025/26 also impacts on the base year of 2026/27 which is £11.2m higher in the Draft Determination than the Final Business Plan. The latest forecast revenue for 2026/27, including assumed movements in revenue drivers, is set out below.

2.2.2 The financial model uses two drivers to model non-household revenue, consumption and premises growth.

2.3 Consumption

2.3.1 Consumption can be easily isolated as a revenue driver and is reported through the P Tables. Due to the six-monthly meter reading cycle for most meters and the CMA's settlement timetable defined in the Market Code, there is a c2 year lag after a supply period until estimated consumption is mostly replaced with actual consumption.

2.3.2 Because consumption is on a long-term downward trend (as previously evidenced via the Draft and Final Business Plans) and because the CMA estimates consumption by extrapolating from the last 2 available actual meter readings (as defined in the Market Code), actual consumption is typically lower than estimates.

2.3.3 Based on the latest available data, the 2026 P-Tables report a 0.83% decline in consumption for 2025/26. This rate of decline is expected to increase to around 1%, in line with the long-term trend agreed with WICS in the Final Business Plan, by the time that the meter reading cycle and settlement process conclude next year.

2.3.4 Consumption is assumed to continue to decline by 1% in 2026/27, in line with the historic trend, Final Business Plan and Draft Determination.

2.4 Premises Growth

2.4.1 The non-household premises growth rate in the financial model is, in reality, a composite of all revenue drivers other than price and consumption, including number of premises, Rateable Value and mix. Based on actual out-turn revenue for 2025/26 and the agreed long-term consumption decline of 1%, the financial

model indicates a non-household premises growth of -1.5% in 2025/26, a decline.

2.4.2 For 2026/27, forecast revenue based on year-to-date actuals and the agreed long-term consumption decline of 1% indicate a non-household premises growth rate of 0.16% for 2026/27.

2.4.3 Based on actual out-turn revenue for 2025/26, the year-to-date actual data for 2026/27 (including the impact of the 2026 RV revaluation) and the revenue drivers above, forecast revenue for 2026/27 is £13.4m lower than the Draft Determination.

2.4.4 The differences in revenue and drivers for 2025/26 and 2027/27 between the Final Business Plan, Draft Determination and latest actual and forecast data are summarised in the tables below:

Table 3: Non-household revenue

Non-household Revenue - £m

	2025/26	2026/27
Final Business Plan	444.9	484.2
Draft Determination	454.0	495.4
Movement to Draft determination	(9.1)	(11.2)

	Actual	Forecast
Actual Non-Household Revenue YE 25/26 and current forecast 26/27	444.4	482.0
Movement Draft Determination to Actual/Forecast Revenue	(9.6)	(13.4)

Table 4: Non-household revenue driver

Non-household revenue drivers

		2025/26	2026/27
Consumption	Business plan – forecast	(0.35%)	(1.00%)
	Draft Determination – forecast	(0.35%)	(1.00%)
	AR26 P-Table – latest actuals	(0.83%)	
	Forecast eventual out-turn	(1.00%)	(1.00%)
Premises Growth	Business plan – forecast	(1.27%)	0.30%
	WICS Draft Determination - forecast	0.75%	0.75%
	Actual (based on 1% consumption decline) Forecast (based on 1% consumption decline)	(1.5%)	0.2%

2.4.5 The consequential impact of updating for actual revenue for 2025/26 and latest forecast revenue for 2026/27 over the SR27 period is £82m (24/25 prices) compared with the Draft Determination.

2.4.6 Aligning the exit position from SR21 with the latest validated out-turn data, mitigates the risk of revenue shortfall, underfunding and constrained customer outcomes.

2.4.7 On this basis, we consider that WICS should adjust its financial model to reflect 25/26 actual figures and our latest forecast for 26/27, as these represent the most reliable information available. The impact of this is that Scottish Water will have £82m less funding than shown in Draft Determination model, which needs to be made up in the price trajectory for the SR27 period.

2.5 Rateable Value

2.5.1 In section 9.3.5 - 9.3.7, WICS has indicated that in future, non-household tariffs should be adjusted to ensure that 3-yearly Rateable Value (RV) revaluations are revenue neutral. They expect Scottish Water's 26/27 revenue to be higher than the Final Business Plan and have requested an updated forecast of 2026/27 revenue with underlying assumptions including the impacts of the 2026 RV revaluation as part of this submission. This section 2.5 is that response.

2.5.2 Two elements of non-household revenue are derived from RV: volumetric charges for unmetered premises (for whom an assessed consumption is derived from their RV) and property drainage charges (which are based on RV except for a minority of customers whose charges are based on surface area).

2.5.3 The formula for deriving assessed consumption from RV was revised in the 2026/27 Wholesale Charges Scheme so that the effect of the revaluation on unmetered charges was revenue neutral.

2.5.4 The 2026 revaluation has increased RVs used to derive property drainage charges by 9.8% compared with the previous valuation roll and initially increases property drainage revenue by £21m. However, a significant proportion of this uplift is expected to be reversed due to a number of drivers:

- **Proposals and appeals:** the proposal and appeals process enables owners and occupiers of premises to challenge an RV with the Scottish Assessors and apply to have it revised (usually downwards).
- **Conversion to area-based charges:** The Wholesale Charges Scheme allows premises which mostly drain their surface water away from the public sewer, except for areas which are required to be connected to comply with

environmental regulations (e.g. loading bays) to switch from RV-based to area-based drainage charges (which are typically much lower due to the small connected area).

- **Deregistration of services:** customers apply via their Licensed Provider for the removal of drainage charges because they are not, or are no longer, connected to the public sewerage system for surface water drainage.

2.5.5 Third party intermediaries are active in identifying candidates for the latter two categories, driving a steady volume of applications.

2.5.6 For the previous revaluation cycle in 2023, the total RV used to derive property drainage charges initially increased by 7% in the initial revaluation but then reduced by 8%, resulting in a net reduction of 2% and a c£2.5m per annum shortfall in SR21 revenues from 2023/24 onwards. The 8% reduction was comprised of:

- 3% reduction from upheld proposals and appeals
- 1% reduction from conversions to lower area-based charges
- 5% reduction from deregistration of services

2.5.7 Based on the previous 2023 revaluation cycle, upheld proposals and appeals, conversions to area-based charges and de-registrations are expected to reverse 8% of the initial 9.8% RV increase in the 2026 revaluation, reversing £19.6m of the initial £21m increase in property drainage revenue. The net revenue impact of the 2026 revaluation is therefore estimated to be £1.4m in 2026/27 and £9m across SR27.

2.5.8 Data from the 2023 revaluation for all premises with property drainage charges is summarised below:

	£m Rateable Value
Total Chargeable RV prior to 2023 revaluation (Mar 23)	4,649
Total Chargeable RV post 2023 revaluation (May 23)	4,981
Initial RV increase from 2023 revaluation before proposals and appeals	331 7%
Total Chargeable RV pre 2026 revaluation (Mar 26)	4,575
RV reductions from proposals and appeals to date	-136 -3%
RV reductions from conversions to area-based charges	-24 -1%
RV reductions from deregistrations	-244 -5%
Net RV change from 2023 revaluation after proposals and appeals	-74 -2%

Figure 5: Impact of 2023 RV Revaluation Summary - Premises with property drainage

Table 5: Impact of 2023 revaluation on drainage charges

2023/24 Property drainage charge: 3.3705 p / £ Rateable Value / year

	£	
Property Drainage Pre 2023 revaluation at 23/24 price (Mar 23)	156.7m	
Property Drainage Post 2023 revaluation at 23/24 price (May 23)	167.8m	7%
Property Drainage at end of 2023 revaluation period 23/24 price (Mar 26)	154.2m	-2%

2.5.9 As indicated above, latest forecast revenue for 2026/27 is £13.5m below Draft Determination. This is primarily due to actual revenue for 2025/26 being £9.6m below the level assumed in the Draft Determination, along with a lower growth rate (with the growth rate in the financial model being a composite of all revenue drivers, including Rateable Value, other than consumption and price). Taking account of the expected level of upheld RV proposals and appeals, a 1% per annum assumed consumption decline and provisions for current run-rates of deregistrations, non-household revenue for 2026/27 is forecast at £482m as set out above.

3 Revenue - Infrastructure Charges Income

3.1 Part 3 Growth Investment Needs

3.1.1 In the Draft Determination, WICS has reduced Part 3 growth investment, funded by Infrastructure charges, from £123m (as we had included in the Final Business Plan) to £96m. This reduction was made following discussions between WICS and SW since the Final Business Plan (in the context of Infrastructure charge setting).

3.1.2 These discussions identified that the £123m forecast in the Final Business Plan was based on projecting forward a peak in spending from 2025/26, which included the Bertha Park development in Perth. Adjusting for this short-term increase in spending, results in a long-term forecast of £16 million expenditure per annum in 24/25 prices (equating to £96m over SR27). The £96m spend proposed by WICS in the Draft Determination is therefore agreed.

3.1.3 As noted in the Draft Determination (Appendix, 1.5.30), growth investment in Part 3 infrastructure should not be funded through primary charges. Infrastructure charges, therefore, need to be set at a level which provides adequate funding to meet developer demand, in order that the water industry avoids constraining housing growth in Scotland.

3.1.4 Because funding for growth in Part 3 infrastructure is ring-fenced, any under-recovery of income would result in delays to the delivery of Part 3 infrastructure whilst any over-recovery would be addressed by lower Infrastructure charges to developers in future years. WICS have confirmed their intention to review Infrastructure charges on an annual basis to ensure that they remain cost-reflective, providing a mechanism to review the level of Infrastructure charges within the 2027-33 period and ensure that working capital remains adequate to meet developer demand.

3.1.5 Based on the forecasts of 1% household revenue growth and 20,000 new household connections p.a. in the Final Business Plan, WICS have concluded increasing infrastructure charges by CPI would be sufficient to provide £96m of Part 3 growth investment over SR27.

3.1.6 Given the rate of annual investment in Part 3 growth, the duration and variety of projects, it is proposed that the working capital balance of Part 3 growth investment is maintained at a target minimum level of £8m, representing 6 months spend, so that projects can be progressed at a rate that meets developer demand to avoid constraining growth.

3.1.7 The working capital balance for Part 3 growth investment is forecast to be £4-5m by the end of 2026/27. On that basis, Infrastructure income of £100m is required in SR27, comprising £96m Part 3 growth investment plus £4m to increase the working capital balance above the target minimum of £8m (6 months spend).

3.2 Infrastructure Charge Income

3.2.1 Infrastructure charge income is a function of charge increases and the volume of receipts.

3.2.2 Changes to the timing of Infrastructure charge billing during the current regulatory period (so that charges are now billed at the end of the application and connection process rather than the start) mean that the annual volume of Infrastructure charge receipts currently remains below the number of household connections. The rate at which the number of Infrastructure charge receipts will converge with the number of connections remains uncertain.

3.2.3 As set out in section 1 above, household growth continues to be forecast at 1%, noting this looks optimistic in the context of recent data and that there is downside risk to this forecast with growth of 0.7% in the first half of the 2027-33 period being a plausible alternative scenario. Household growth at this level, combined with a gradual convergence of infrastructure charge receipts back to the number of connections over the 2027-33 period could result in a further fall in working capital in 2027/28 below £4m, which represents only 3 months spend.

3.2.3 Given the uncertainty around both the volume of Infrastructure charge receipts and the level of household growth, a 10% real-terms increase in Infrastructure charges is proposed in 2027/28 to mitigate the material risk of under-funding for Part 3 Infrastructure in the early years of the 2027-33 period adversely impact housing development.

3.2.4 Charges are then assumed to increase by no more than CPI over the remainder of the 2027-33 period, with annual reviews via the Scheme of Charges process providing an opportunity to ensure that charges remain cost reflective and that working capital remains at an appropriate level, weighing Scottish Government's principle of stable charges against the risks of household growth being constrained by water industry underfunding.

4 Interest Expense Reduction

4.1 In the financial modelling that underpins the Draft Determination, WICS has assumed that Scottish Water will continue to draw down debt around January in each year, based on borrowing patterns observed between 2016 and 2025. However, this assumption does not reflect the significant reduction in our cash balance and management strategy that means this timing will not be repeated in SR27.

4.2 Historically, Scottish Water maintained higher cash balances and was therefore able to defer borrowing until later in the financial year. During SR21 however, we have consciously, deliberately and transparently reduced cash holdings, releasing funds to support the growing investment programme and operating with a revised, lower liquidity risk appetite.

4.3 Because we have reduced our cash and the pattern of receiving funding from customers is fixed throughout the year by the payments from councils, the government borrowing is our only source of cash which is variable in profile – i.e. we can choose when we receive it. This means it is now used to manage our cash position during the year against our risk appetite, ensuring we have cash to meet the timing needs of the investment programme (which varies from month to month). This results in a need for earlier borrowing in each year than in the past.

4.4 Given this change, borrowing patterns from the most recent years are more representative of the approach which will occur during SRC27 than a long-term average extending back to 2016. In 2024/25, the average drawdown date was in December, while in 2025/26 it moved significantly earlier to be in October, reflecting the need to access funding sooner as available cash balances reduced. These are actual figures.

4.5 Historic averages derived from periods of substantially higher cash balances therefore do not capture this, with higher cash balances borrowing was timed to reduce interest payments and understates future interest payment requirements and does not reflect the change in context of lower cash balances. The Final Business Plan provides an appropriate basis for forecasting debt drawdown timing during 2027–33 given the current liquidity management practices and recent borrowing experience.

4.6 This change can be evidenced in the current financial year. Current year borrowings and forecast, demonstrate £135m will have been drawdown by 31 August 2026 based on actual requests already submitted to Scottish

Government. Projecting the budget borrowings to the end of year implies an average borrowing date in October, in line with the previous year.

4.7 We expect this to move slightly earlier as we complete our reduction of cash; hence supporting our Final Business Plan position of end of September. We therefore ask for the assumption to be re-aligned, to avoid a funding shortfall that will put outcomes at risk.

5 Reduction in Tax Paid

5.1 Scottish Water acknowledges that forecasting the allocation of future investment expenditure across the various capital allowance pools is inherently judgemental. The allocation will ultimately depend on the nature, timing and delivery profile of projects undertaken during the SR27 period and therefore cannot be determined with complete precision at this stage, an assumptions-based approach is therefore the basis of the Final Business Plan.

5.2 Our assumptions have been developed using historical experience together with our current understanding of the expected investment programme and relevant developments in capital allowances legislation and case law. We consider this approach provides the most appropriate basis for forecasting future capital allowances over the SR27 period.

5.3 We note that the WICS assumptions appear to be based largely on the average allocation achieved over the period 2019-20 to 2024-25. Historical averages are a useful reference point; however, they do not in isolation necessarily provide the best estimate of future outcomes where there are known changes affecting the composition of expenditure and the availability of capital allowances.

5.4 Scottish Water is therefore unclear why WICS has accepted Scottish Water's proposed assumption for the General Rate Pool (37.2%) whilst applying different assumptions for the Long-life Pool, Structures and Buildings Allowance Pool and Investigations. The same underlying evidence base and methodology has been applied across all pool allocations and it is not evident why historical averages have been adopted for certain pools but not for others. Given the interdependency between the capital allowance pools, changes made to one category would generally be expected to have a corresponding impact elsewhere.

5.5 In particular, Scottish Water considers that its proposed assumption for the Structures and Buildings Allowance (SBA) Pool is more reflective of future expenditure than the simple historic average adopted by WICS. SBA was only introduced in October 2018 and is only available on qualifying construction expenditure where the contracts were signed after that date. As a result, the historical period includes a number of years where qualifying expenditure was inherently constrained because a significant proportion of Scottish Water's asset base related to projects where the contract was signed before the introduction of SBA. As the proportion of expenditure relating to post October 2018 projects increases, the historic average becomes a less reliable predictor

of future outcomes. The proposed assumption of 1.7% reflects this change in the composition of investment activity and is therefore considered a more appropriate estimate of SBA qualifying expenditure over the SR27 period than a simple average of the historic data.

5.6 In addition, recent developments in capital allowances case law may mean that historical allocations are not fully representative of future outcomes. In particular, the Supreme Court decision in Orsted West of Duddon Sands (UK) Ltd and others v HMRC (the "Gunfleet Sands" case) confirmed that expenditure on surveys, studies, investigations and other preparatory activities does not automatically qualify as expenditure "on the provision of plant or machinery" and that a close connection with the actual provision of the plant is required. HMRC has subsequently confirmed that preparatory studies and surveys of this nature generally fall outside the scope of plant and machinery allowances.

5.7 This decision is particularly relevant to Scottish Water given the significant level of investigations, surveys, environmental assessments, design activity and other preparatory work undertaken as part of major infrastructure projects. The principles established in Gunfleet Sands may reduce the proportion of expenditure qualifying for plant and machinery allowances in future periods compared with historical experience and therefore support the need for a forward-looking assessment rather than reliance solely on historic averages.

5.8 Given the uncertainty surrounding both the future investment programme and recent developments in capital allowances case law, Scottish Water considers that its proposed allocations represent a balanced and reasonable forecast based on historical evidence, professional judgement and known future factors. In particular, we do not consider there is a clear rationale for accepting Scottish Water's proposed assumption for the General Rate Pool whilst selectively applying historic averages to the remaining pools. Scottish Water believes its proposed allocation percentages remain the most appropriate assumptions for forecasting tax depreciation during the SR27 period and should be applied consistently.

5.9 Scottish Water’s proposed assumptions reflect known factors and provide a balanced and evidence-based estimate of expected capital allowances over the SR27 period.

5.10 Accordingly, Scottish Water asks that its proposed capital allowance allocation assumptions are adopted in full for the Final Determination to prevent a funding shortfall that will put outcomes at risk.

6 Other Funding - Increase in Allowed for Borrowing

6.1 Scottish Water notes an inconsistency between the borrowing assumptions reflected in the Draft Determination analysis, which we believe is incorrectly set at £1.03 billion rather than the £1.02 billion submitted in the Final Business Plan.

6.2 The Draft Principles of Charging consultation for SR27 (6. Consultation on the Principles of Charging - Water services - investing in and paying from 2027: consultation - gov.scot) dated 6/1/2026, states that Scottish Water will have access to borrowing of £170 million per annum during the SR27 period. Applied equally over the six years of the regulatory period, this would equate to total net new borrowing of £1.02 billion, not £1.03 billion as used by WICS.

6.3 This is consistent with the ongoing agreed borrowing levels between Scottish Water and Scottish Government. This is also consistent with the agreed borrowing level that Scottish Water had available in SR21 – in practice an additional £10m was made available to Scottish Water in 2021 from Covid green recovery funding. The Scottish Spending Review which covers the first three years of SR27 assumes lending at £170m. Scottish Government have confirmed that the £1.03bn in the commissioning letter was an oversight and we understand they have now communicated the same to WICS.

7 Other Funding - Cash Release due to Excess Cash Held in SR21

7.1 In the Draft Determination, WICS have assumed that Scottish Water will enter the SR27 regulatory period with £70m, and exit with £50m, thus generating £20m of effective additional cash during the regulatory period. This opening cash difference is identified as cash relating to the SR15 completion programme.

7.2 We do not dispute the inclusion of the SR15 completion funding, however we highlight an area of risk.

7.3 Whilst we have deliberately reduced cash balances during SR21 in order to maximise available investment, the side effect of this move is we are now operating much closer to the Board's current risk appetite minimum, which is to hold 4 weeks' operating costs and not less than £50m in SW. This risk appetite is subject to change from time to time.

7.4 This is the risk appetite minimum level – by definition it is not designed to be routinely breached as this would represent risk deemed excessive by the Board. In a business with very approximately £40m spend per week (and growing) this is only possible by generally operating with ranges calibrated to not drop below £50m, meaning the mid-point is higher. The role of managing a practical cash limit to provide planning headroom above the £50m is delegated to Finance.

7.5 The budget for 26/27 targets closing cash of £76m for this very reason, to allow relatively small overspends or timing differences to not erode cash to at or beyond the minimum. We expect that cash will remain at similar levels between £50-£100m throughout the regulatory period. As a result, it is almost certain that there will be a higher closing cash position at the end of the SR27 period, which will lead to a small shortfall in intended funding.

7.6 It is also worth noting that we expect that our approach to cash risk appetite, if it remains unchanged, to lead to increasing cash requirements in SR33.

8 Funding Model and Use of Borrowing from Scottish Government

8.1 In the draft determination, an assumption is made that Scottish Government borrowing is attributable and attributed to specific projects (eg West Central Bioresources).

8.2 This is not how Scottish Water uses its borrowing.

8.3 Our borrowing capacity is fixed in nominal terms, at £170m per annum. This has declined as a percentage of total funding from 15% in 2021/22 to 8% in 2026/27 and by the end of 2032/33 is forecast to be 6%. This erosion in real value places more pressure on customer charges than if it were a constant proportion of the funding mix. Additionally, unlike many water companies in England and Wales, we do not have access to other debt markets to increase the amounts available to us either in total or in period to manage fluctuations.

8.4 We also do not hold cash significantly above our risk appetite levels. As detailed above these are currently set at around 4 weeks of spending, with at least £50m available in Scottish Water's own bank account.

8.5 In order to be able to hold these lower levels of cash buffer whilst operating a business with such a large annual spend and a relatively fixed profile of receiving customer funds, we need to carefully manage our cash balances from month-to-month and it is for this purpose that we use our borrowing facility.

8.6 In other words, we use the access to new Scottish Government borrowing to manage our cash balances from month-to-month, meeting the requirements of our overall operating cost and investment programme spend profile. We do not access the borrowing in order to fund any project in particular.

8.7 Whilst this borrowing is critical to us in being able to run a stable business with limited cash balances, we would therefore not be able to evidence borrowing being used to fund any particular project or other; as this is simply not how it is used currently.

8.8 The graph below illustrates how the borrowings are used to maintain our bank balance at around £80m – our target working bank balance to ensure that our risk appetite is not breached.

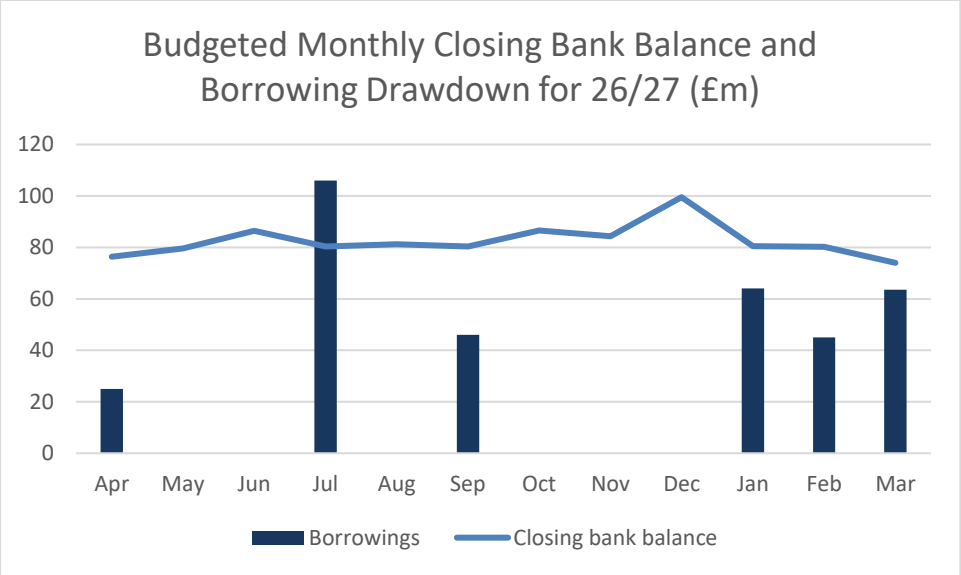


Figure 5: Budgeted monthly closing bank balance and borrowing drawdown

9 Wholesale Payment Terms Review

9.1 WICS' planned review of wholesale payment terms could have a one-off adverse cash impact of £0-110m. WICS wrote to Scottish Water on 2/7/26 signalling planned review of wholesale payment terms, with consultation due in autumn 2026 and a final decision by March 2027. Current practice is Licensed Providers prepay charges and this forms part of the overall SW cash and working capital balance.

9.2 The current value of these prepayments is c£110m, and it is directly correlated to charges (increases in charges increase this value). Scottish Water utilises these prepayments within its calculation of cash available and working capital to support the capital programme. During SR21 we have consciously, deliberately and transparently reduced cash holdings, tracking the forecast in the financial model.

9.3 A change in the prepayment terms, that reduces the value of this prepayment is £ for £ a reduction in the working capital and funding available to Scottish Water. This was not included in our Final Business Plan, nor in the Draft Determination given the timing of the notification in July.

9.4 Elimination of the prepayment would result in a £110m shortfall in funding. Similarly any alternative that is not prepayment, such as credit security or bond will also result in a £110m shortfall in funding.

9.5 A reduction in prepayment cover to 2 months for all Licence Providers (LP) (currently average 2.5 months with most LPs on either 2 or 3 months' prepayment) would have c£25m adverse cash impact.

9.6 There is some potential for mitigation. Scottish Water is the owner investor in SW Business Stream, the largest LP in the market. The value of the prepayment from SWBS is £67m. Any reduction in prepayment terms results in cash inflow to SWBS, increasing the value in Scottish Water Group but critically not increasing the cash available to Scottish Water in assessing its working capital or cash available.

9.7 This is because SWBS operates independently of Scottish Water and there is no power to transfer cash from SWBS into subsidiaries that are controllable by Scottish Water that would result in access to this cash. This control rests with SWBS.

9.8 SW is currently required to pay interest to LPs on prepayments based on Scottish Water's long term cost of debt to reflect reduced borrowing requirements. The impact of wholesale payment terms on Scottish Water working capital is therefore recognised in current arrangements and any change to payment terms would need to be considered in SR27 financial model.

9.9 The values in the above analysis are based on current pricing, any increase in charge path above inflation (i.e. CPI +) increases the real value of this cash flow, therefore later in the period has a higher value and a higher shortfall given it is a one off adjustment.

9.10 Scottish Water has no access to other sources of finance and therefore any cash reduction is a funding reduction and puts at risk the balance between resources and outcomes.

Annex 3
Outcomes

Contents

1 Context and Approach 1
1.1 Context 1
1.2 Approach 2
2 Water Continuity 5
2.1 Introduction 5
2.2 Total Leakage (1.07) 5
2.3 Leakage in Deficit Zones (1.08) 8
2.4 Per Capita Consumption (PCC) (1.10) 10
2.5 Low Pressure Register (1.11) 12
2.6 Unplanned ITS Above 6 Hours (1.12) 13
2.7 ITS Average Minutes Lost (1.13) 13
2.8 Repeat ITS (1.14) 14
3 Water Quality 17
3.1 Introduction 17
3.2 Drinking Water Quality (1.21) 17
3.3 Taste & Odour Contacts (1.17) 19
3.4 Discolouration Contacts (1.18) 21
4 Water Environment 24
4.1 Introduction 24
4.2 Waste Water Treatment Works Permit Compliance (1.28) 24
4.3 Serious Environmental Pollution Incidents (1.29) 26
4.4 Environmental Pollution Incidents Wastewater (1.30) 26
4.5 Sewerage Infrastructure Discharges (1.32) 27
5 Wastewater Flows 30
5.1 Introduction 30
5.2 Number of internal sewer flooding incidents (1.24) 30
5.3 Number of external sewer flooding incidents (1.26) 31
5.4 Number of internal properties at risk of sewer flooding (1.25) 32
5.5 Number of external areas at risk of sewer flooding (1.27) 33
6 Carbon Emissions 35
6.1 Overview 35

6.2 Investment Emissions (1.39) 35
7 Developing Measures 41
7.1 Introduction 41
7.2 Communities - ABC Tracker (1.06) 41
7.3 Water Supply Reported Risk - WRSS (1.22) 41
7.4 River Water Quality (1.33) 42
7.5 Biodiversity Outcomes (1.42) 43
7.6 Resource Recovery (1.43) 43
7.7 Asset Health Tracker (1.44) 44
Appendix A: Update to Table 1 Following Review of Draft Determination's Proposals 45
Appendix B: Update of Repeat Interruptions to Supply 48
Appendix C: Update of Internal and External Flooding Register Outcomes 50
Appendix D: Further Details of our Review of the Investment Emissions Reduction 52
Appendix E: Further details of Drinking Water Quality Risks 54

Annex 3 – Expected Outcomes

i. WICS' Draft Determination has consulted on a set of nine questions with question 3 being "To what extent do you consider that our proposed targets for outcomes are appropriate?". In this Annex we provide supporting information to the response in our main document to this question.

Summary

ii. The Draft Determination (DD) reviewed the 49 Outcome Measures in Table 1 of Scottish Water's Final Business Plan (FBP) and concluded the following:
- Accepted: 15 service outcomes and 3 carbon emission outcomes
- Stretched: 16 service outcomes and 2 carbon emissions outcomes
- Questioned: 2 service outcomes and 3 carbon emissions outcomes
- Sought further development: 6 service outcomes
- Rejected as unnecessary: 2 service outcomes.

iii. This Annex responds to the 23 "Stretched" and "Questioned" measures. This Annex explains how we propose to:
- accept 9 out of the 16 stretched service outcomes for 2032/33,
- extend 7 metrics outcomes for 2032/33 beyond those proposed in the FBP but not as far as that in the DD as they are not achievable.
- retain 2 service outcomes and 5 carbon emission outcomes at our FBP outcome positions as the DD positions are not achievable.

iv. In completing this analysis for these outcomes, we have:
- rebased our SR27 starting position (usually 2026/27 forecast) using the latest available performance data for the last year;
- engaged with the evidence provided in the DD;
- considered how the additional investment allocation of the £168m proposed in the DD could be distributed to benefit each outcome.

v. Table 1 below shows Scottish Water's position for each of the Stretched and Questioned service outcome measures (18 in total).

vi. The remainder of this document lays out the decision for each outcome.

vii. Please note that the increased outcomes beyond FBP baseline are contingent on:
- the allocation of the £168m; and
- the Final Determination addressing the concerns we have raised in the DD regarding the proposed efficiency challenge.

viii. We have focussed mainly on the start and end positions for the outcomes. Whilst we show annual outcome profiles in the tables in this Annex, they should be considered as indicative only at this stage. The annual profile is too dependent on many other factors in this DD Response and therefore we intend to fully analyse the specifics of the annual outcome profile as part of the Delivery Plan baselining exercise once we receive the Final Determination.

ix. Table 1 below summarises the FBP, the DD and our responses to the DD positions (including the additional £168m funding allocation). It highlights in yellow where we accept the figure in the Draft Determination as stretching but achievable, and in white where we propose an alternative figure to be stretching and achievable.

x. Table A1 of Appendix A sets out the full set of 49 Outcome Measures and their proposed projections over SR27.

xi. Table 2 below summarises the proposed allocation of the £168m additional funding proposed in the DD. The rationale for this allocation is included in the individual sections in this Annex.

xii. The allocation of this investment creates a further dependency with the outcomes proposed in this Draft Determination Response and we show this interdependency in this Annex. If this additional investment is withdrawn during the Final Determination, we expect to revise the Outcomes being offered at the point of the Delivery Plan when the Baseline is established.

xiii. We consider that:

- Throughout the SR27 customer research, our customers have supported value-added outcomes.
- The extension of outcomes and funding could be interpreted as a bringing forward of investment that is needed in SR27 to attain outcomes sought by our customers, Independent Customer Group (ICG) and Consumer Scotland (in sewer flooding and leakage), DWQR (in water aesthetics and drinking water quality) and SEPA (in wastewater treatment works permits compliance and unsatisfactory intermittent discharges).
- The package of extended outcomes is across water quality, water continuity, water environment and wastewater flows and therefore well-balanced as extensions to the FBP outcomes.

xiv. Therefore, we consider the extension of outcomes proposed in our Draft Determination Response to be stretching, achievable and in keeping with the progression from the original FBP and supported by our stakeholders for inclusion in SR27.

xv. Figure 1 provides a comparison of 2032/33 outcome positions for the 18 Stretched and Questioned outcomes of the DD. It sets out:

- The proposed position in the FBP on the left.
- The proposed position in the DD on the right.
- The position of the FBP having updated for 2025/26 information in the green triangle.
- The proposed position in this response following review, funding and further stretch in the outcomes in the blue triangle.

xvi. The decision note reflects the main driver of influence, and the final column reflects the allocation of the £168m proposed in the DD.

	Ref`	Metric	Remain aligned to FBP ⟵ Proposed DD Response Out-turn Position (2032/33) ⟶ Move To DD position	Decision Note	Add. £
Water	1.07	Total leakage - 3 yr average	411 ▲410 ▲405 385 Ml/d	Move towards ELL* + funding	£12m
	1.08	Zonal leakage in deficit zones - 3 yr	203 ▲ 186 Ml/d	No zonal change	
	1.10	Per capita consumption (PCC) - 3yr	174 ▲ 165 l/p/d	No DD stretch levers	
	1.11	Low pressure – 3yr	26 ▲25 ▲ 20 props	Rebase latest performance	
	1.12	Unplanned interruptions	7000 5500▲ ▲5000 props	Rebase + profile to DD	
	1.13	Minutes lost	15 ▲12 ▲10 mins	Rebase + profile to DD	
	1.14	Repeat Interruptions to Supply	240 ▲220 170 postcodes	Rebase	
	1.17	Taste & odour	0.51▲ ▲0.46 contacts/pop	With extra funding	£15m
	1.18	Discolouration	1.90▲ ▲1.80 1.33 contacts/pop	With extra funding	£5m
	1.21	Drinking water compliance	99.95 ▲99.955 ▲99.96 99.97 % fails/sample	With extra funding	£32m
Wastewater	1.24	Annual internal sewer flooding	1.48 ▲1.27 number/props	Rebase	£50m
	1.25	Internal sewer flooding register	1.47 ▲1.29 ▲1.17 number/props	Rebase + extra funding	
	1.26	Annual external sewer flooding	11.16 ▲9.52 number/props	Rebase	
	1.27	External sewer flooding register	11.88 ▲11.38 ▲10.83 number/props	Rebase + extra funding	
	1.29	Serious pollution (EPI Cat 1/2)	5 ▲4 number	Accept DD	
	1.30	Total pollution (all categories)	34.6▲ 32.5▲ 31.5 number/length	With extra funding	£10m
	1.28	WwTW Compliance	96.4▲ ▲96.7 97.2 % fails/580 works	With extra funding	£11m
	1.32	UIDs register	712 ▲704 ▲686 number	With extra funding	£33m

*Economic Level of Leakage

Figure 1: Comparison of 2032/33 Outcome Positions

Table 1: Updated table of the Draft Determination with two added columns for this response (with the £168m) funding allocation and two added metrics (at the bottom)

Highlighting in in yellow where we accept the Draft Determination and in white where we propose an alternative outcome

		Final Business Plan			Draft Determination		DD Response		
Ref	**Short Description**	**Base (2026/27)**	**Position at 2032/33**	**% Change (Rounded)**	**Stretch at 2032/33**	**% Change**	**Position at 2032/33**	**% Change**	**Comment**
1.07	Total leakage (ML/d)	456	411	*10%*	385	*15.7%*	405	*11.1%*	*Extend with funding*
1.08	Zonal leakage in deficit zones (ML/d)	233	203	*13%*	186	*20.4%*	203	*13.1%*	*Retain FBP*
1.10	Per capita consumption (PCC) (l/p/d)	178	174	*2%*	165	*7.3%*	174	*2.2%*	*Retain FBP*
1.11	Low pressure (properties)	30	26	*13%*	20	*33.3%*	20	*33.3%*	*Accept DD*
1.12	Unplanned interruptions (properties)	7,000	7,000	*0%*	5,000	*28.6%*	5,000	*28.6%*	*Accept DD*
1.13	Minutes lost (mins)	15	15	*0%*	10.4	*30.7%*	10	*33.3%*	*Accept DD*
1.14	Repeat ITS (postcodes)	240	240	*0%*	170	*29.2%*	*221*	*7.9%*	*Extend*
1.17	Taste & odour (contacts/ pop)	0.51	0.51	*0%*	0.46	*10.2%*	0.46	*10.2%*	*Accept DD with funding*
1.18	Discolouration (contacts / pop)	2.11	1.90	*10%*	1.33	*36.9%*	1.80	*14.7%*	*Extend with funding*
1.21	Drinking water compliance (%fails/sample)	99.93%	99.95%	*29%*	99.97%	*57.7%*	99.96%	*42.9%*	*Extend with funding*
1.24	Annual internal sewer flooding (No./prop)	1.57	1.48	*6%*	1.27	*18.8%*	1.27	*18.8%*	*Accept DD*
1.25	Internal sewer flooding register (No./prop)	1.47	1.47	*0%*	1.17	*20.5%*	1.17	*20.5%*	*Accept DD with funding*
1.26	Annual external sewer flooding (No./prop)	10.43	11.16	*-7%*	9.52	*8.7%*	9.52	*8.7%*	*Accept DD*
1.27	External sewer flooding register (No./prop)	11.35	11.88	*-5%*	10.83	*4.6%*	10.83	*4.6%*	*Accept DD with funding*
1.29	Serious pollution (EPI Cat 1/2) (No.)	8	5	*37%*	4	*50.0%*	4	*50.0%*	*Accept DD*
1.30	Total pollution (wastewater Cat 1-3) (no./length)	34.8	34.8	*0%*	31.5	*9.5%*	32.5	*6.6%*	*Extend with funding*
1.28	WwTW permit compliance (fails/580works)	96.4	96.4	*0%*	96.4	*0.0%*	96.7	*9.5%*	*Extend with funding*
1.32	Unsatisfactory Intermittent Discharges (No.)	862	712	*17%*	712	*17.4%*	686	*20.4%*	*Extend with funding*

Table 2: Proposed Allocation of Additional Funding (£168m) Across the Main Services

Service	Change in outcome	Funding*
Sewer Flooding	to improve internal and external sewer flooding register positions	£50m
Leakage (total)	to reduce leakage towards its sustainable economic level in SR27	£12m
Water aesthetics	to reduce both Discolouration and Taste & Odour contacts by 2032/33	£20m
Drinking Water quality	to become 99.96% compliant by the end of SR27	£32m
Unsatisfactory Intermittent Discharges (UIDs)	to increase the UIDS removals to 168 by 2032/33	£33m
Environmental pollution incidents (EPIs)	to reduce incidents in our wastewater system during SR27	£10m
Wastewater treatment works	to improve permit compliance by the end of SR27	£11m
Total		£168m

* Extra funding above FBP.

1 Context and Approach

1.1 Context

1.1.1 We have carefully considered the proposals in the Draft Determination (DD). The Draft Determination set out proposals for the 49 Outcome Measures in Table 1 of Scottish Water's Final Business Plan (FBP). It concluded as follows:

A: Accepted: 15 service outcomes and 3 carbon emission outcomes were accepted from our FBP in the Draft DD.

B: Stretched: 16 service outcomes and 2 carbon emission outcomes had proposed stretched outcomes to 2032/33 in the DD.

C: Questioned: 2 service outcomes and 3 carbon emission outcomes have requests in the DD for information to further aid understanding.

D: Sought further development: 6 service outcomes had no projections in the FBP or DD and were identified as needing further development.

E: Rejected as unnecessary: 2 service outcomes were considered in the DD not to be needed for monitoring in SR27.

1.1.2 A comparison for FBP and DD 2032/33 positions is provided in Figure 2 across customer service, carbon emissions, water and wastewater services. The 49 Outcome Measures are given a group A to E to identify the categories above. It also shows the changes, and materiality of the changes between the FBP and DD proposals.

Customer Service

Metric description	Units	FBP	DD	Change	Group
Developer customer experience measure	Score	84.23	84.20	0%	A
Non-household customer experience measure	Score	90.17	90.20	0%	A
R-MeX (wholesale services)	Score	9.00	9.00	0%	A
Household customer experience measure	Score	88.35	88.40	0%	A
UKCSI	Score	77.90	77.90	0%	A
Communities measure (ABC measure)		-	-	-	D
Asset health		-	-	-	D
Strategic Tracker	%	23	-	-	E

Carbon emissions

Metric description	Units	FBP	DD	Change	Group
Net Zero Emissions	tCO2e	198,126	212,637	-7%	B
Operational emissions (W)	tCO2e	9,688	9,688	0%	A
Operational emissions (WW)	tCO2e	71,291	98,291	-38%	C
Baseline emissions	%	0.82	0.77	7%	C
Operational emissions (net)	tCO2e	54,529	81,529	-50%	C
Investment emissions	tCO2e	143,597	131,108	9%	B
Carbon capture/sequestration	tCO2e	-26,450	-26,450	0%	A
Biodiversity land-use		-	-	-	A
Biodiversity outcomes		-	-	-	D
Resource recovery		-	-	-	D
New net operational metric	tCO2e	92,816	92,816	0%	A
Investment Intensity	%	51	51	0%	A

A. DD Accepted: 15 service outcomes and 3 carbon emission outcomes
B. DD Stretched: 16 service outcomes and 2 carbon emission outcomes
C. DD Questioned: 2 service outcomes and 3 carbon emission outcomes
D. DD sought further development: 6 service outcomes
E. DD Rejected as unnecessary: 2 to be unnecessary

Water

Metric description	Units	FBP	DD	Change	Group
Total leakage	% Reduction	9.9	15.7%	59%	B
Zonal leakage in deficit zones	% Reduction	12.9	20.4%	58%	B
Business demand	% Reduction	14.9	14.9%	0%	A
Per capita consumption (PCC)	l/head/d	174	165	5%	B
Low pressure	Properties	26	20	23%	B
Unplanned interruptions	Properties	7,000	5,000	29%	B
Minutes lost	Minutes	15.00	10.40	31%	B
Repeat ITS	Postcodes	240	170	29%	B
Worst historic drought	Pop at risk	2,564,000	2,564,000	0%	A
Peak demand	Pop at risk	876,753	876,753	0%	A
Taste & odour	Contacts / pop	0.51	0.46	10%	B
Discolouration	Contacts / pop	1.90	1.33	30%	B
Lead SW networks	Number	25,154	25,154	0%	A
Lead customer pipes	Compliance	0.98	0.98	0%	A
Drinking water compliance	% Compliance	99.95	99.97	40%	B
WRAP	Score	4,568	4,568	0%	D
DWQR reported incidents	No. of incidents	25	25	0%	A
Lead pipes removed public network	Number	18,000	18,000	0%	A

Wastewater

Metric description	Units	FBP	DD	Change	Group
Annual internal sewer flooding	No/props	1.48	1.27	14%	B
Internal sewer flooding register	No/props	1.47	1.17	20%	B
Annual external sewer flooding	No/props	11.16	9.52	15%	B
External sewer flooding register	No/props	11.88	10.83	9%	B
WwTW discharge compliance	% Fails / 580 works	96.4	96.4	0%	C
Serious pollution (EPI Cat 1/2)	Number	5	4	20%	B
Total pollution (all categories)	Number	34.8	31.5	9%	B
Sludge compliance	Compliance	0.0	0.0	0%	A
Network discharges (UIDs)	Number	712	712	0%	C
River water quality		-	-	-	D
UID removals in SR27	Number	150	-	-	E

Figure 2: Comparison of the Movement from 2026/27 Forecasts in the FBP and DD

1.1.3 The DD proposed particularly stretching outcomes relative to the FBP particularly in the areas of:

- Leakage (total and deficit zones)
- Repeat Interruptions to Supply
- Drinking water quality
- Water aesthetics (Discolouration and Taste & Odour contacts)
- Environmental pollution incidents
- Sewer flooding
- Investment emissions.

1.1.4 The DD also asked Scottish Water to review with DWQR and SEPA the outcomes of:

- Unsatisfactory Intermittent Discharges (UIDs)
- Wastewater treatment works (WwTW) permit compliance.

1.1.5 Having re-baselined following additional outturn information for 2025/26 and engaged with the evidence profiled in the DD, and in addition to the 18 metrics accepted in the DD, we accept a further nine proposed outcomes for 2032/33. Having considered the allocation of the £168m additional funding proposed in the DD we offer a stretch beyond our FBP proposals for a further seven outcomes for 2032/33 and retain a further seven. Of the six metrics proposed for development, we align on five and consider one (river water quality) that has been referred to SEPA given their regulatory oversight in that area. Of the two metrics proposed for reflection, we propose that one (UIDs removed in SR27) is included in the SR27 monitoring.

1.1.6 Please note that the increased outcomes beyond baseline are contingent on

(1) the allocation of the £168m; and

(2) the FD addressing the concerns we have raised in the DD regarding the proposed efficiency challenge.

1.2 Approach

1.2.1 This Annex provides an overview of the analysis we have undertaken across all of the outcomes that have been adjusted or queried. In particular we have focused on each of the “Stretched” and “Questioned” outcome measures (23 in total) with a specific analysis section for each of them which lays out the challenge, our analysis and our position as part of the DD Response which we request WICS consider when developing their Final Determination.

1.2.2 We explain our response to the 23 metrics identified in the DD for review, across Sections 2 to 6:

- Section 2: Water continuity

- Section 3: Water quality
- Section 4: Water environment
- Section 5: Wastewater flows
- Section 6: Carbon emissions.

1.2.3 In completing this analysis for these outcomes, we have:

1) rebased our SR27 starting position (usually 2026/27 forecast) using the latest available performance data for the last year;
2) engaged with the evidence provided in the DD;
3) considered how the additional investment allocation of the £168m proposed in the DD could be distributed to improve the outcomes for 2032/33 where it is feasible.

1.2.4 We have also provided an indicative annual profile between the start and end positions, but the detailed and complex annual profiling can only be completed once we understand the impact of the Final Determination on the investment programme scheduling as we prepare the Delivery Plan for February 2027.

1.2.5 We agree WICS' assessment of the areas where stakeholders (customers and regulators) would most welcome additional outcomes to 2032/33. We agree with the DD's allocation of the £50m to sewer flooding with the expectation of maintaining the level of our flood registers by the end of 2032/33 to that in 2024/25 in the presence of changing climate change impacts on our systems.

1.2.6 In reviewing these 18 service outcome projections of the DD, we observed that there was not always a consistent approach to forming the rebasing position from recent outturns and so we have sought to adopt a more consistent approach in forming the 2026/27 rebased forecast from recent performance in our response:

- For the annual performance metrics, we consider it best practice not to use a single year figure but an average of recent years' performance to reflect a more representative typical weather year into the base forecast position for 2026/27. In water continuity and water quality we have used a 3-year average, in water environment we use a 4-year average and in wastewater flows we use a 5-year average. This aligns well with the approach adopted by Ofwat for the water and wastewater companies in England & Wales.
- For those metrics that are linked to a register, the latest year's outcome (in this case 2025/26) is a useful starting point. This is because the additions are more uncertain and outside of our direct control and the reductions are driven by interventions and investment to rebase the forecast 2026/27.

1.2.7 Following careful review and analysis of proposed changes to the carbon emissions profile including West Central Bioresource in the DD, we do not amend our FBP projections other than for the additional outputs and outcomes associated with the proposed additional £168m funding in Section 6.

1.2.8 Section 7 provides an update on the developing metrics.

1.2.9 Appendix A sets out the full set of 49 Outcome Measures and their proposed projections over SR27; this also includes 2025/26 forecast and outturns figures and our updated base year forecast for 2026/27. Appendices B to E provide additional information on the projections for repeat interruptions to supply and the sewer flooding at risk metrics, and further information on carbon investment emissions and drinking water quality risks.

2 Water Continuity

2.1 Introduction

2.1.1 In water continuity the DD proposed seven metrics for change to the FBP as shown in Table 3 and their projected outcomes are discussed in this section utilising £12m of the additional £168m funding allocation proposed in the DD.

Table 3: Water Continuity Metrics Stretched or Questioned in the DD

Ref	Metric	Type
1.07	Total Leakage	3-year average
1.08	Leakage in deficit zones	3-year average
1.09	Per Capita Consumption	3-year average
1.11	Low pressure	Register
1.10	Unplanned ITS above 6 hours	Annual
1.12	Average minutes lost	Annual
1.14	Repeat ITS	Register

2.2 Total Leakage (1.07)

2.2.1 **Summary:** For this outcome the steps in the process to review the DD proposal and form a revised 2032/33 stretching outcome as a percentage reduction of the 3-year average leakage metric relative to 2024/25 are summarised in Table 4. The DD position is stretching, not economic and not acceptable whereas our position with an extra £12m of funding is stretching and achievable.

Table 4: Total Leakage Summary Steps and 2032/33 Outcomes (% Reduction Relative to 2024/25)

Step	Stage	Outcome	Description
1.	FBP	9.9%	End year 411 ML/d 3-year average, 400 ML/d annual
2.	DD	15.7%	End year 384 ML/d 3-year average stretch by reference to England & Wales mains rehabilitation programme focussed on bursts and leakage reduction
3.	Rebased (inc latest analysis)	10.1%	End year 410 ML/d 3-year average, 398 ML/d annual stretch by reference to Scottish Water's mains rehabilitation programme focussed on repeat interruption to supply and AC mains rather than bursts and leakage reduction
4.	DD Response with Funding	11.1%	End year 405 ML/d 3-year average, 392 ML/d to reach lowest estimate of Sustainable Economic Level of Leakage with additional £12m funding.

2.2.2 **Review:** We step through our assessment as follows:

2.2.3 **Step 1**: Our FBP proposed that the 3-year average Leakage figure is reduced by 9.9% by 2032/33 relative to its level 2024/25.

2.2.4 **Step 2**: The DD proposed that the 3-year average Leakage in SR27 is stretched further and reduced by 15.7% for 2032/33, based on an expectation from England & Wales of mains rehabilitation programmes delivering greater leakage reduction.

2.2.5 **Step 3**: **Rebase**. We note that the mains rehabilitation programme in England & Wales aims to reduce bursts and leaks. In Scotland that would involve a focus on cast iron mains replacement. In contrast, our mains rehabilitation programme aims to reduce repeat interruptions to supply in postcode areas that involves a focus on postcodes affected and asbestos cement (AC) mains replacement, rather than bursts and leaks from iron mains replacement. This was factored into our FBP projected outcomes for repeat interruptions to supply (ITS) and leakage.

2.2.6 In reviewing our analysis for the FBP, we only found grounds to rebase the 9.9% reduction on the FBP marginally:

- For FBP, in SR21, for the whole system, 73 mains replacement schemes to reduce repeat customer interruptions (RCI) and ITS replaced 323 km of mains in total. Assessment of leakage before and after the mains replacement shows a leakage benefit of 1.4 ML/d, which can be expressed as an average of 0.22 l/s per scheme. When applied to the planned 183 schemes and 1130 km of mains replacement planned for SR27, this yields an estimated leakage reduction of 3 ML/d which was used in the FBP.
- On review we identified that the same data could be looked at and yield 0.05 l/s per km (rather than per scheme). This alternative interpretation forms an estimate of 5 ML/d or an additional 2 ML/d of volume to our original assessment.

2.2.7 When updated our FBP projections for 2025/26 outturn and factor in the additional 2 ML/d into the annual leakage figure by the end of SR27, the 3-year average leakage figure for 2032/33 is 410 ML/d.

2.2.8 **Step 4: Increase funding**. In recognition of the DD reference to this being a customer priority area, we have allocated £12m[1] to further reduce leakage to an 11.1% reduction to a 405 ML/d 3-year average by 2032/33.This corresponds to a 1% point stretch beyond the rebase of 410 ML/d to a leakage figure of 392 ML/d in the final year of SR27 that is towards the lower estimate of its Sustainable Economic Level of Leakage (SELL) which is at 386 ML/d.

[1] Based on a 8 ML/d reduction and 2 ML/d offset at the FBP unit cost of £2m per ML/d reduction.

2.2.9 The profile of reduction is reflected in Table 5. Further details of the Step 1, 3 and 4 profiles are provided in Table 6.

Table 5: Percentage Reduction of Three-Year Average Leakage Relative to the 2024/25 Level*

Step	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33
FBP	0.00%	0.60%	1.1%	2.0%	2.9%	4.2%	5.8%	7.7%	9.9%
DD	0.00%		1.1%	2.5%	4.1%	6.6%	9.3%	12.4%	15.7%
Outturn	0.00%	0.08%							
DD response			0.9%	**1.7%**	**3.0%**	**4.4%**	**6.3%**	**8.5%**	**11.1%**

Table 6: Total Leakage in SR27 Detailed Profiles for Steps 1 and 3

Step 1: FBP

	SR21			SR27					
	Baseline YR								
	YR4	YR5	YR6	YR1	YR2	YR3	YR4	YR5	YR6
	2024-2025	2025-2026	2026-2027	2027-2028	2028-2029	2029-2030	2030-2031	2031-2032	2032-2033
YR AV	454	450 -4	448 -2	443 -5	437 -6	430 -7	421 -9	411 -10	400 -11
3YR AV	*455.90*	*453*	451	447	443	437	429	421	411
% Reduction from 3yr Baseline (24/25)	-	*-0.56%*	*-1.1%*	-2.0%	-2.9%	-4.2%	-5.8%	-7.7%	-9.9%
% Reduction in YR	-	*-0.6%*	*-0.6%*	-0.8%	-1.0%	-1.4%	-1.7%	-2.0%	-2.4%

Step 3: Rebased

	SR21			SR27					
	Baseline YR								
	YR4	YR5	YR6	YR1	YR2	YR3	YR4	YR5	YR6
	2024-2025	2025-2026	2026-2027	2027-2028	2028-2029	2029-2030	2030-2031	2031-2032	2032-2033
YR AV	454	453 -1	448 -5	443 -5	437 -6	430 -7	421 -9	410 -11	398 -12
3YR AV	*456.37*	*455*	452	448	443	437	429	420	410
% Reduction from 3yr Baseline (24/25)	-	*-0.14%*	*-0.9%*	-1.7%	-2.9%	-4.2%	-5.8%	-7.8%	-10.1%
% Reduction in YR	-	*-0.2%*	*-0.8%*	-0.8%	-1.2%	-1.4%	-1.7%	-2.1%	-2.5%

Step 4: Additional funding

	SR21			SR27					
	Baseline YR								
	YR4	YR5	YR6	YR1	YR2	YR3	YR4	YR5	YR6
	2024-2025	2025-2026	2026-2027	2027-2028	2028-2029	2029-2030	2030-2031	2031-2032	2032-2033
YR AV	454	453 -1	448 -5	443 -5	436 -7	428 -8	418 -10	406 -12	392 -14
3YR AV	*456.37*	*455*	452	448	442	436	427	417	405
% Reduction from 3yr Baseline (24/25)	-	*-0.14%*	*-0.9%*	-1.7%	-3.0%	-4.4%	-6.3%	-8.5%	-11.1%
% Reduction in YR	-	*-0.2%*	*-0.8%*	-0.8%	-1.3%	-1.5%	-1.9%	-2.3%	-2.9%

2.2.10 **Conclusion:** For the projections of 3-year average leakage reduction metric we conclude:

- the DD proposed a stretch 15.7% reduction but assumed a mains rehabilitation programme with the burst and leakage focus of England & Wales that is not the focus on Scottish Water's mains rehabilitation programme in the FBP and is beyond SELL (which costs society and hence is uneconomic) in SR27. As such it is stretching but not funded, not achievable, not economic and not acceptable to Scottish Water.
- In response to the DD challenge, we have stretched the 3-year average leakage outcome by 2032/33 from 411 ML/d in our business to 405 ML/d corresponding to an 11.1% reduction relative to the 2024/25 equivalent figure dependent on an additional £12m funding. This is stretching but achievable.

2.3 Leakage in Deficit Zones (1.08)

2.3.1 **Summary:** For this outcome the steps in the process to review the DD proposal and form a rebased 2032/33 stretching outcome as a percentage reduction of the 3-year average leakage in deficit zones metric relative to 2024/25 are summarised in Table 7. The DD position is stretching, not economic and not acceptable to Scottish Water.

Table 7: Leakage in Deficit Zones Summary Steps and 2032/33 Outcomes (% Reduction Relative to 2024/25)

Step	Stage	Outcome	Description
1.	FBP	12.9%	End year 203 ML/d 3-year average, 195 ML/d annual
2.	DD	20.4%	End year 185 ML/d 3-year average stretch by the same factor stretch to the FBP as that applied in the DD for Total Leakage
3.	Rebased	13.1%	End year 203 ML/d 3-year average, 194 ML/d annual stretch by reference to a reprofiling from 2025/26 outturn

2.3.2 **Review:** We step through our assessment as follows:

2.3.3 **Step 1**: Our FBP proposed that the 3-year average Leakage figure is reduced by 12.9% by 2032/33 relative to its level 2024/25.

2.3.4 **Step 2**: The DD proposed that the 3-year average Leakage in SR27 is stretched from 9.9% and reduced to 15.7% by 2032/33 (a factor of 1.59), based on an expectation from England & Wales of mains rehabilitation programmes delivering greater leakage reduction. The DD proposed that the 3-year average leakage in deficit areas in SR27 is stretched from 12.9% to 20.4% by 2032/33 (a factor of 1.59).

2.3.5 This approach is overly simplistic and does not account for the differences in the levels of leakage relative to SELL between deficit and non-deficit zones. It is economic to drive leakage down in deficit zones to the SELL to delay investment that would otherwise be needed to secure the supply. The FBP

prioritised the planned reduction of the remaining leakage to SELL in the zones in deficit to reach an annual leakage of 195 ML/d in 2032/33. It is not economic to reduce it further.

2.3.6 **Step 3**: The sum of annual reductions from 2024/25 was 36ML/d in the FBP and we retain this in the DD response. Given the 2025/26 was 4 ML/d above the FBP forecast (i.e. FBP forecast was 230 ML/d and outturn 234 ML/d we reprofile a reduction of -4 ML/d to attain the 13.1% on the 3-year average in 2032/33. This involves a 3 ML/d reduction on the FBP forecast in 2026/27 (as we do not expect to fully recover the original FBP forecast by the end of SR27) and a further 1 ML/d reduction in 2032/33. This takes the annual leakage in deficit zones to 194 ML/d, and average 3-year level to 203 ML/d.

2.3.7 The profile of reduction is reflected in Table 8. Further details of the Steps 1 and 3 profiles are provided in Table 9.

*Table 8: Leakage Reduction in Areas with Supply-Demand Balance Deficit * Relative to 2024/25 Level*

Step	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33
FBP	0.00%	0.8%	1.5%	2.2%	3.3%	5.1%	7.2%	9.8%	12.9%
DD	0.00%		1.5%	3.5%	5.2%	8.1%	11.4%	15.5%	20.4%
Outturn	0.00%	0.21%							
DD response			**0.5%**	**0.9%**	**2.5%**	**4.5%**	**6.9%**	**9.7%**	**13.1%**

Table 9: Leakage in Deficit Zones in SR27 Detailed Profiles for Steps 1 and 3

Step 1: FBP

	YR4	YR5	YR6	YR1	YR2	YR3	YR4	YR5	YR6
	2024-2025	2025-2026	2026-2027	2027-2028	2028-2029	2029-2030	2030-2031	2031-2032	2032-2033
YR AV	231	230 -1	229 -1	226 -3	222 -4	217 -5	211 -6	204 -7	195 -9
3YR AV	*233.47*	*232*	230	228	226	222	217	211	203
% Reduction from 3yr Baseline (24/25)	-	*-0.84%*	*-1.5%*	-2.2%	-3.3%	-5.1%	-7.2%	-9.8%	-12.9%
% Reduction in YR	-	*-0.8%*	*-0.7%*	-0.7%	-1.2%	-1.8%	-2.3%	-2.8%	-3.5%

Step 3: Rebased

	YR4	YR5	YR6	YR1	YR2	YR3	YR4	YR5	YR6
	2024-2025	2025-2026	2026-2027	2027-2028	2028-2029	2029-2030	2030-2031	2031-2032	2032-2033
YR AV	231	234 4	231 -3	228 -3	223 -5	217 -6	211 -6	204 -7	194 -10
3YR AV	*233.47*	*234*	232	231	228	223	217	211	203
% Reduction from 3yr Baseline (24/25)	-	*0.03%*	*-0.5%*	-0.9%	-2.5%	-4.5%	-6.9%	-9.7%	-13.1%
% Reduction in YR	-	*0.0%*	*-0.5%*	-0.4%	-1.6%	-2.0%	-2.6%	-3.0%	-3.7%

2.3.8 **Conclusion:** For the projections of 3-year average leakage in deficit zones reduction metric we conclude:

- the DD proposed a stretch 20.4% reduction but assumed a similar factor to the reduction applied between the FBP and DD to Total Leakage when the FBP already takes the level of leakage to its SELL in deficit zones. As such it is stretching but not economic and not acceptable.
- we have rebased the 3-year average leakage in deficit zones outcome and reprofiled to a final annual figure of 194 ML/d corresponding to a 3-year average figure of 203 ML/d and 13.1% reduction relative to the 2024/25. This is stretching but achievable.

2.4 Per Capita Consumption (PCC) (1.10)

2.4.1 **Summary:** For this outcome the steps in the process to review the DD proposal and form a 2032/33 outcome are summarised in Table 10. The DD position is stretching, not funded and not achievable for SR27 because Scottish Water will be collating the information evidence to inform stakeholders on the options that would best supply demand deficit zones in Scotland (including options relating to the level of PCC) during SR27, and the FBP for SR27 is not funded to influence PCC materially. Our reviewed position is an expected outcome for 2032/33 for which Scottish Water has very limited influence in SR27.

Table 10: Per Capita Consumption Summary Steps and 2032/33 Outcomes (Litres Per Person Per Day)

Step	Stage	Outcome	Description
1.	FBP	174	Reduction from 178 base year driven primarily driven by a continued gradual return from home-to-the office working.
2.	DD	165	Reduction from base year assuming that a 1% pa reduction observed immediately following 2021-22 (Covid)
3.	Reviewed	174	Reduction from 178 base year driven primarily driven by a continued gradual return from home-to-the office working with FBP strategy and funding consistent with up to a maximum of just 1l/p/d impact.

2.4.2 **Review:** We step through our assessment as follows:

2.4.3 **Step 1**: Our FBP proposed a reduction in the 3-year average PCC of 4 l/p/d from 178 l/p/d to 174 l/p/d over SR27 primarily driven by a continued gradual return from home-to-the office working.

2.4.4 **Step 2**: The DD proposed a greater reduction of 13 l/p/d to 165 l/p/d which assumed that a 1% pa reduction observed immediately following 2021/22 (Covid) would continue through SR27.

2.4.5 It would be more appropriate to assume that the rate of home-to-office working will reduce at a diminishing rate beyond 2021-22 and note that it is already running at a much lower rate. Yet if its outcome is simply dependent on a home-to-office-working assumption then it is outside of Scottish Water's influence and neither a meaningful nor SMART performance metric for Scottish Water in SR27.

2.4.6 In England & Wales, water company business plans include significant stakeholder-agreed investments in programmes to include smart meters into domestic properties with the aim of reducing consumption and bills. Hence PCC can be a SMART performance metric for a water company in certain circumstances.

2.4.7 We note that the median unmetered PCC of the water companies in England & Wales is around 165 l/p/d (published by Discover Water, 2024/25). However, it ranges across the companies from 141 to 304 l/p/d and is clearly affected by many factors that influence customer demand across the regions represented by the companies. Hence it does not provide a reliable single figure to establish a benchmark for attainment of a PCC of unmetered supplies for any single company.

2.4.8 **Step 3**: In Scotland, we have predominantly unmetered supplies and do not have a similar domestic metering strategy or programme to that in England & Wales. The FBP includes an allocation of £6m across SR27 to raise customers' awareness of the value of water and build a platform to reduce demand, by expanding our current campaign activities to achieve a year-round conversation about water and trialling and developing solutions that we can deliver at scale if they are economically viable.

2.4.9 We are currently undertaking a study in Dundee to look at options with a longer-term ambition of reducing PCC in our Long-Term Strategy. While we expect to inform stakeholders of options following completion of this study during SR27, our FBP confirms that we have no stakeholder-agreed approach to allocate further funding to implement further PCC reduction during SR27.

2.4.10 In SR27, our scope to influence PCC remains very limited and can be shown to be up to a maximum scale that is a fraction of the 13 l/p/d reduction assumed in the DD proposals. Using early indications from our Dundee-based study that flow regulators could reduce domestic consumption by up to 48 l/p/d, the potential reduction in PCC could be about 1 l/p/d per £6m of investment.[2] Absolute impacts of a similar scale were also observed from Scottish Water's water efficiency trials in 2018.

[2] Assuming £6m enables the potential installation of 30,000 monitors for about 1.2% of the total households in Scotland where boundary boxes for installation are assumed to already exist, its potential impact on PCC could be up to a reduction of 1 l/p/d (ie.1.2% x 48 l/p/d) as a high-end estimate.

2.4.11 We therefore retain the expected outcome profile provided in the FBP of 174 l/p/d. This is summarised in the projections in Table 11.

Table 11: Three-Year Average Per Capita Consumption (Litres Per Person Per Day)

Step	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33
FBP	179.0	178.0	178	177	176	176	175	175	174
DD			178	174	172	170	168	167	165
Outturn		177.6							
DD response		177.6	**178**	**177**	**176**	**176**	**175**	**175**	**174**

2.4.12 **Conclusion:** We conclude that

- the DD's proposal to reduce PCC in Scotland to 165 l/p/d by the end of SR27 is not achievable. It is inconsistent with current strategy in Scotland which is to inform and evidence the best approach to meeting supply demand deficit zones in Scotland; and
- we aim to continue our Dundee-based study into PCC reduction options during SR27 to inform stakeholders and our business plans beyond SR27.

2.5 Low Pressure Register (1.11)

2.5.1 We accept the proposed start and end outcome levels in the DD of 20 for the low pressure register.

2.5.2 The register has a 3-year average to 2025/26 of 25 properties, reduced to 15 properties in 2025/26 is expected to vary around 20 properties going forwards. Hence it is appropriate to maintain this register at the historic low average of 20 properties over SR27 and address the variation in needs from one year to the next.

2.5.3 Its projected outcomes are set out in Table 12.

Table 12: Number of Properties on the Low Pressure Register

Step	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33
FBP	22	28	30	36	39	31	28	27	26
DD			30	20	20	20	20	20	20
Outturn	22	15							
3-yr average	36	25							
DD response	22	15	25	**20**	**20**	**20**	**20**	**20**	**20**

2.6 Unplanned ITS Above 6 Hours (1.12)

2.6.1 We accept the proposed outcome in the DD of 5,000 for unplanned interruptions above 6 hours for the end of SR27.

2.6.2 While we have attained a performance close to this level in the last two years, the 3-year average rounded to 5,500 reflects a challenge for a more typical weather year and hence forms a more appropriate start position for SR27. This stretching start position is more than 20% below the FBP start position due to outturns in recent years. Through further operational improvements we aim to reduce this by a further 9% over the regulatory period.

2.6.3 The projected outcomes for this metric are set out in Table 13.

Table 13: Unplanned Interruptions Greater than 6 Hours, Excluding 3rd Party (Properties)

Step	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33
FBP	5,047	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000
DD	5,047		7,000	5,000	5,000	5,000	5,000	5,000	5,000
Outturn	5,047	5,169							
3-yr average	5,745	**5,566**							
DD response	5,047	5,169	**5500**	**5500**	**5400**	**5300**	**5200**	**5100**	**5000**

2.7 ITS Average Minutes Lost (1.13)

2.7.1 We accept the proposed outcome in the DD of 10 for the end of SR27 for average minutes lost. This is a similar stretching position to that of the unplanned interruptions above 6 hours metric.

2.7.2 While we have attained a performance close to this in the last two years, the 3-year average of 11.6 minutes reflects a challenge for a more typical weather year and a more appropriate start position. This is more than 20% below our Final Business Plan position and forms a stretching start position due to outturns in recent years. Through further operational improvements we aim to reduce this to 10 minutes over the regulatory period – reflecting a similar 9% improvement over the period rounded down to the nearest minute.

2.7.3 The projected outcomes for SR27 for this metric are set out in Table 14.

Table 14: Average Minutes Lost Due to Water Supply Interruptions (Over 3 Hours)

Step	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33
FBP	10.6	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
DD	10.6		15.0	12.9	12.4	11.9	11.4	10.9	10.4
Outturn	10.6	9.5							
3-yr average	13.2	11.6							
DD response	10.6	9.5	11.6	**11.4**	**11.1**	**10.8**	**10.5**	**10.3**	**10.0**

2.8 Repeat ITS (1.14)

2.8.1 **Summary:** For this outcome the steps in the process to review the DD proposal and form a rebased 2032/33 stretching outcome are summarised in Table 15. The DD position is stretching, not funded and not achievable whereas our rebased position is stretching, funded and achievable.

Table 15: Repeat ITS Summary Steps and 2032/33 Outcomes (Number of Postcodes)

Step	Stage	Outcome	Description
1.	FBP	240	Removals sufficient to retain 2025/26 forecast level of 240
2.	DD	170	Removals assumed to return to 2021/22 outturn level
3.	Rebased	221	Removals sufficient to retain rebased 2025/26 outturn level of 221

2.8.2 **Review:** We step through our assessment as follows:

2.8.3 **Step 1**: Our FBP set out a maintained position of 240 postcodes on the register by the end of SR27 relative to a forecast position of 240 in 2025/26 and 2026/27. As this is a register of postcodes affected by repeat ITS customer contacts rather than an annual metric, it is affected by the additions from customer contacts and reductions from investment. To maintain this register level, it requires the number of additions and reductions to be the same.

2.8.4 **Step 2:** The DD approach to setting the expected outcome at the end of SR27 assuming that the register can be moved to a historic figure of 170 postcodes. The historic position identified in the DD is a figure for 2020/21[3].

2.8.5 As this register uses thresholds of the number of calls in a single-year and 3-year time-windows to identify postcodes where there were high call rates related to repeat interruptions to supply, the 2020/21 register postcodes will have been affected by the Covid year and is not representative of a typical year or benchmarking. An average historic value would have been more appropriate and is 221 postcodes.

2.8.6 The DD approach has a start position of 240 postcodes and assumed a net reduction, from the sum of additions and removals of postcodes from the register over the regulatory period, of an additional 70 postcodes relative to that in the FBP. The whole of Scottish Water's mains rehabilitation programme for SR27 involves 1065 km and we estimate that 70 postcodes would require more

[3] Note: Our review of the historic figures of the new metric identified that reported figures were misaligned by year and new postcodes being introduced by Royal Mail had been omitted and hence the outturn numbers are reset in Table 14. The outturn position for 2024/25 is 200 and that for 2025/26 is 221.

than 400km to be added to the programme at a cost that would exceed the £118m additional allowance identified in the DD.

2.8.7 **Step 3:** We have updated the projections for the 2025/26 outturn of 221 postcodes and with an end-of-SR27 expected outcome that has 221 postcodes.

2.8.8 This is a new metric for SR27 with significant challenges to complete a 1065 km mains rehabilitation programme that is focussed on postcode removal and associate with AC mains replacement alongside addressing emergency replacement requirements related to asset flooding. Its start point level of 221 postcode is the 2025/26 outturn (and 3-year average figure to 2025/26) and we aim to restore this metric to 221 postcodes by the end of SR27 through an expected removal of about 160 postcodes by the end of 2032/33.

2.8.9 We expect the profile to deteriorate in the early years of the period through additions exceeding removals in their early year of SR27 before the mains rehabilitation programme km per annum rate increases sufficiently to restore the register to 221. In this respect it has similar expected profile properties to the register profiles in wastewater flows, but with sufficient funding in the FBP to enable this for the Repeat ITS metric.

2.8.10 **Step 4:** With additional funding to be allocated constrained to £168m in the DD, we have not allocated any additional funding to its further improvement in SR27, favouring the allocation of £12m to bring total leakage to SELL in water continuity and the additional outcomes associated with around £50m in water quality, water environment and wastewater flows as set out in this response.

2.8.11 We therefore retain the principle of restoring the projected outcome for this metric by the end of SR27 in our FBP, having updated it to 221 postcodes from the 2025/26 outturn position as a stretching, funded and achievable level.

2.8.12 The projected outcomes for this metric are set out in Table 16. Further details of the proposed projections are provided in Appendix B.

Table 16: Repeat Interruptions to Water Supply (Number of Postcodes)

Step	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33
FBP		168	210	261	216	240	240	270	300	275	260	250	240
DD							240	220	210	200	190	180	170
Outturn	172	215	268	250	200	221							
DD response	172	215	268	250	200	221	231	**243**	**251**	**256**	**257**	**242**	**221**

Note: Our review of the historic figures of the new metric identified that reported figures were misaligned by year and new postcodes being introduced by Royal Mail had been omitted and hence the outturn numbers are reset above.

2.8.13 **Conclusion:** We conclude that:

- the DD's proposal to reduce the number of postcodes to 170 by 2032/33 is not achievable due to funding limitations and not advisable as it is a new metric with significant challenges; and
- through our funded FBP mains rehabilitation programme of 1065 km we aim to restore the register metric by the end of SR27 to 221 postcodes by the end of SR27 through an expected removal of about 160 postcodes by the end of 2032/33.

3 Water Quality

3.1 Introduction

3.1.1. In water quality the DD proposed three metrics for change to the FBP as shown in Table 17 and their projected outcomes are discussed in this section utilising £52m of the additional £168m funding allocation proposed in the DD.

Table 17: Water Quality Metrics Stretched or Questioned in the DD

Ref	Metric	Type
1.21	Drinking water quality	Annual
1.17	Taste & odour contacts	Annual
1.18	Discolouration contacts	Annual

3.2 Drinking Water Quality (1.21)

3.2.1 **Summary:** For this outcome, the steps in the process to review the DD proposal are summarised in Table 18. We form a rebased 2032/33 outcome and a further stretch with £32m additional funding. Having carefully reviewed this outcome, our position is that the DD position is stretching but not achievable. We have rebased the start position to reflect recent performance which is lower than that assumed in the DD. We have then applied to this start position the 0.030% point improvement stretch, a further internal stretch and then extension from additional funding to aim for 99.960% by the end of SR27 (a 0.010% points improvement above the FBP). Through discussion we understand that DWQR consider our DD Response position to be a stretching outcome for 2032/33.

Table 18: Drinking Water Quality Summary Steps and 2032/33 Outcomes

Step	Stage	Outcome	Description
1.	FBP	99.950%	Reduced sample fails of 0.021% points from 2026/27 forecast of 99.929%
2.	DD	99.970%	Reduced sample fails of 0.030% points from (rounded to 2 dec place) 2024 outturn of 99.940% or 0.035% points from (rounded to 3 dec place) 2024 outturn of 99.935%
3.	Rebased	99.955%	Reduced sample fails of 0.034% points from 3-year (rounded to 3-dec place) average to 2025 of 99.921% as rebased 2026/27 forecast
4.	Funded	99.960%	Reduced sample fails of an addition 0.005% points from £32m additional funding allocation.

3.2.2 **Review:** We step through our assessment as follows:

3.2.3 **Step 1**: Our FBP set out an improved position from a forecast 2026/27 position of 99.929% to 99.950% by 2032/33 from a significant investment programme in SR27.

3.2.4 **Step 2**: The DD set out a stretched outcome for reach 99.970% by 2032/33. The DD referenced that this would align Scottish Water performance with the companies in England & Wales between 2021 and 2024. It identified a DWQR reported outcome of 99.94% for 2024 and questioned the lower forecast for 2026/27 of 99.929% in the FBP. It also confirmed that the metric is to exclude sample fails for cryptosporidium.

3.2.5 **Step 3:** We welcome the clarification of definition to base the metric of regulatory and risk-based sampling and to exclude cryptosporidium fails (which had a third decimal point effect on the measure).

3.2.6 The reported figures have varied between 99.913% and 99.938% to 3 decimal points over the last 5 years. The variation from one year to another is reported through our Annual Return and reflects changes to water quality at source and in our assets and operations. The DWQR figure of 99.94% is correctly reported for 2024 when rounded to two decimal points, but our FBP and monitoring uses 3 decimal points given sample sizes of over 300,000 in a year. At 3-decimal points the 2024 figure is 99.935% and the 2025 figure is 99.914%.

3.2.7 We consider it best practice to take an average of recent performance when forming a typical performance for the start position in 2026/27 and to apply this to 3 decimal points. We use a 3-year average to be consistent across all annual water metrics in this report and with Ofwat. This results in a figure of 99.921% over the last 3 years to 2025/26.

3.2.8 If we were to then add the 0.030% stretch of the DD to this rebase then the end year position would be 99.951%. However, given the challenge of the DD to stretch further from the funding of the FBP, we have stretched this rebased position to 99.955%.

3.2.9 **Step 4:** We have taken the rebase of 99.955% and stretched this further to 99.960% by the end of SR27 through the allocation of £32m out of the additional £168m funding to undertake additional disinfection treatment and flow proportionate dosing.

3.2.10 Through discussion we understand that DWQR consider our DD Response position to be a stretching outcome for 2032/33.

3.2.11 The projected outcomes for this metric are set out in Table 19.

Table 19: Drinking Water Quality Compliance (%)

Step	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33
FBP	99.913	99.934	99.916	99.929	99.937	99.942	99.944	99.947	99.949	99.950
DD		99.93		99.93	99.95	99.95	99.96	99.96	99.97	99.97
Outturn	99.913	99.935	99.914							
3-yr average	99.928	99.927	99.921							
DD response	99.913	99.935	99.914	99.921	**99.935**	**99.940**	**99.945**	**99.950**	**99.955**	**99.960**

3.2.12 **Conclusion:** We conclude that:

- the DD's proposal to improve water quality to 99.97% by the end of 2032/33 is not achievable due to rebasing to current performance and funding limitations;
- in response to the challenge to attain greater performance than in the FBP, we have rebased our start position, applied an internal stretch and allocated additional funding of £32m from the additional £168m funding allocation proposed in the DD to stretch and aim for a 99.96% outcome by 2032/33.
- Through discussion we understand that DWQR consider our DD Response position to be a stretching outcome for 2032/33.

3.3 Taste & Odour Contacts (1.17)

3.3.1 We accept the proposed outcome in the DD of 0.46 for the end of SR27 for average taste and odour contacts utilising £15m of the additional £168m funding allocation proposed in the DD.

3.3.2 Our FBP proposed a 0.51 outcome position for 2032/33 and this profile across each year of SR27. The DD challenged us to stretch to an outcome position of 0.46 for 2032/33 and this profile across each year of SR27 as the 3-year average to 2024/25.

3.3.3 The taste and odour contacts metric has varied between 0.37 and 0.59 over the last 5 years and indicates the continued upward pressures discussed in our FBP. We consider it best practice to take an average of recent performance when forming a typical performance for the start position in 2026/27 which is 0.51 over the last 3 years to 2025/26.

3.3.4 We have taken the rebase of 0.51 and stretched this further to 0.46 by the end of SR27 through an additional allocation of £15m out of the additional £168m funding allocation proposed in the DD. An example of the impact of a catchment on this metric, we have identified that 8.8% of all taste & odour contacts in

2025/26 were associated with Glenfarg WTW catchment. The introduction of ozone and related treatment at that works would have the potential to reduce contacts by the end of SR27 similar in magnitude to the change of 0.46 by the SR27 end year position set out in the DD with additional investment of about £15m to the FBP.

3.3.5 The projected outcomes for this metric are set out in Table 20 to reflect additions and removals from the contacts over time through the period.

Table 20: Taste and Odour Contacts (Number per '000 Population Served)

Step	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33
FBP	0.50	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51
DD				0.51	0.46	0.46	0.46	0.46	0.46	0.46
Outturn	0.50	0.51	0.52							
3-yr average	0.49	0.46	0.51							
DD response	0.50	0.50	0.52	0.51	**0.51**	**0.50**	**0.49**	**0.48**	**0.47**	**0.46**

3.4 Discolouration Contacts (1.18)

3.4.1 **Summary:** For this outcome the steps in the process to review the DD proposal are summarised in Table 21. The FBP proposed a 10% improvement in the metric from 2.11 to 1.90 and the DD proposed a further 30% improvement to 1.33 based on a comparison of performance in England & Wales. Our analysis confirmed that the outcome would not be significantly impacted by other water investment and additional mains rehabilitation focussed on discolouration would be needed, at an estimated outlay of £80m. Furthermore, if mains rehabilitation was to be extended in our investment programme, we would expect it to be focused on reducing repeat ITS and AC mains over discolouration. Hence we conclude that the DD proposed outcome is not funded, not achievable, not in keeping with our FBP and therefore not acceptable.

3.4.2 In response to the challenge of addressing discolouration further, we have identified additional investment in trunk mains conditioning automation and flushing with the aim of improving the metric to 1.80 by 2032/33, utilising £5m of the additional £168m funding allocation proposed in the DD.

Table 21: Discolouration Contacts Summary Steps and 2032/33 Outcomes (Number per '000 Population Served)

Step	Stage	Outcome	Description
1.	FBP	1.90	A reduction of 10% on the start position of 2.11
2.	DD	1.33	A stretch position assuming a 30% improvement based on a comparison to performance in England & Wales.
3.	Rebased	1.90	A rebased 3-year average position of 2.17 and retained FBP end position of 1.90 resulting in a 12% reduction
4.	Funded	1.80	A further stretch reduction to 1.80 with an additional £5m allocation out of the additional £168m funding allocation proposed in the DD. .

3.4.3 **Review:** We note that at a joint meeting of DWQR, WICS and Scottish Water it was agreed that the focus of the metric should continue to be discolouration contacts[4] excluding aeration. This focusses on water quality aesthetics that are most valued by our customers. For Delivery Plan, we will update the Table 1 commentary to clarify the basis of the metrics and that aeration contacts will not be included.

3.4.4 We step through our assessment as follows:

3.4.5 **Step 1:** Within its wider water investment plans, the FBP includes a direct investment of £64m to improve performance in discolouration. This programme includes automation of trunk main conditioning in six areas, hydraulic management and self-cleaning networks activities. With this programme, our FBP forecast proposed a 1.90 outcome position for 2032/33 with a 10% reduction from the forecast 2026/27 position.

[4] Includes 'WQ discolouration' and 'WQ colour other' as reported in the Annual Return.

3.4.6 **Step 2**: The DD proposed an outcome position of 1.33 for 2032/33 and this profile across each year of SR27 as the 3-year average to 2024/25. The stretch is a further 30% movement on the FBP end position of 1.90, or a 37% reduction on the FBP forecast 2026/27 position.

3.4.7 The DD assumes that a large proportion of other water quality related investment will also improve aesthetics – with secondary benefits from water quality and water continuity investments. The water aesthetics improvements gained through WTW investments are expected to provide minimal discolouration contact reductions late in SR27 with a reduction in contacts estimated to be equivalent to 0.019 reduction. A further 1% reduction will be achieved through operational activities with use of smart standpipes to reduce risk during network operations. This is of significantly less impact than appears to be assumed in the DD.

3.4.8 We conclude from this that the level of performance sought in the DD of 1.33 would require significantly more investment and in particular the inclusion of additional mains replacement directed towards discolouration contacts, alongside more automation and mains flushing. This would be at a significantly higher unit cost than the current FBP programme focussed on additional automation and mains flushing and we estimate this additional cost to be about £80m.

3.4.9 We are not able to fund this out of the £168m identified for allocation in the DD. We would consider it to be of greater value to customer to extend our mains rehabilitation programme to address more repeat ITS and AC mains before discolouration.

3.4.10 **Step 3**: The discolouration contacts metric has varied between 2.10 and 3.61 over the last 5-years and indicates the continued upward pressures discussed in our FBP. We consider it best practice to take an average of recent performance when forming a typical performance for the start position in 2026/27 which is 2.17 over the last 3 years to 2025/26. While this is a higher level than assumed in our FBP, we assume the offsetting stretch to retain the FBP profile and 2032/33 outcome of 1.90.

3.4.11 **Step 4:** In response to the challenge to improve the outcome for our customers further than 1.90 we have identified opportunities from further investment in in trunk mains conditioning automation at 5 sites and some flushing activity at an additional cost of £5m. We estimate that this could have the potential to improve outcome to 1.80 by 2032/33. The investment of £5m is funded out of the additional £168m funding allocation proposed in the DD.

3.4.12 The projected outcomes for this metric are set out in Table 22.

Table 22: Discolouration Excluding Aeration Contacts (Number per '000 Population Served)

Step	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33
FBP	2.10	2.11	2.11	2.11	2.11	2.11	2.09	2.02	1.99	1.90
DD				2.11	1.98	1.85	1.72	1.59	1.46	1.33
Outturn	2.10	2.11	2.29							
3-yr average	2.65	2.15	2.17							
DD response	2.10	2.11	2.29	2.17	**2.11**	**2.05**	**1.99**	**1.93**	**1.86**	**1.80**

3.4.13 **Conclusion:** We conclude that:

- the DD's proposal to improve discolouration to 1.33 the end of 2032/33 is not achievable due to limited improvement from other water investments in SR27 and the need to extend the mains rehabilitation programme to target discolouration to meet the level of 1.33.
- in response to the challenge to attain greater performance than in the FBP, we have rebased our start position, applied an internal stretch and allocated additional funding of £5m from the additional £168m funding allocation proposed in the DD to stretch and aim for a 1.80 outcome by 2032/33.

4 Water Environment

4.1 Introduction

4.1.1. In water environment the DD proposed four metrics for change to the FBP as shown in Table 23 and their projected outcomes are discussed in this Section utilising £54m of the additional £168m funding allocation proposed in the DD.

Table 23: Water Environment Metrics Stretched or Questioned in the DD

Ref	Metric	Type
1.28	WwTW permit compliance	Annual
1.29	EPIs Cat 1 & 2 Water and Wastewater	Annual
1.30	EPIs Cat 1-3 Wastewater	Annual
1.32	Unsatisfactory Intermittent Discharges	Register

4.2 Waste Water Treatment Works Permit Compliance (1.28)

4.2.1 **Summary:** For this outcome the steps in the process to review the DD proposal are summarised in Table 24. The FBP proposed a performance level of at least 96.4% from the end of SR27 and the DD did not provide an alternative but questioned whether Scottish Water should aim to improve it to the best level in recent years or further towards performance levels observed in England & Wales companies.

4.2.2 In response to the DD challenge we proposed to aim for a level of at least 96.7% by 2032/33 and have allocated an additional £11m out of the additional £168m funding allocation proposed in the DD for this purpose.

Table 24: WwTW Permit Compliance Summary Steps and 2032/33 Outcomes (%)

Step	Stage	Outcome	Description
1.	FBP	96.4	A retained performance level for 2032/33 and its intervening years in the presence of significant risks discussed in our FBP.
2.	DD	96.4	The DD did not propose an alternative performance level but questioned its ambition.
3.	Revised	96.7	A movement to reduce the number of WwTWs from 21 to 19 by the end of the SR27 with £11m of the additional £168m funding allocation proposed in the DD.

4.2.3 **Review:** We step through our assessment as follows:

4.2.4 **Step 1:** The FBP proposed a performance level of at least 96.4% from the end of SR27.

4.2.5 **Step 2:** The DD challenged Scottish Water to set a more stretching expected outcome position. It referred to our best position in recent years at 97.2% (16 works failing permits). It also referred to higher average performance in WwTW compliance in England & Wales.

4.2.6 For a sustainable long-term improvement in this metric, we would need to increase the capability, headroom and resilience across all of the 580 wastewater treatment works covered by the metric. To do this to the levels of performance seen in England & Wales would require substantive levels of investment. With SEPA's focus on a broader range of WwTW compliance through EPAS (Environmental Performance Assessment Scheme), it is not evident to us that they would want Scottish Water to invest in this way. Whilst we will continue to strive for full compliance operationally, maintaining compliance levels and driving continuous gradual improvement, our FBP does not propose or advocate levels of investment to commence any catch-up with England & Wales. SEPA has not sought this to be a priority from SR27 and we are simply not funded to achieve this.

4.2.7 **Step 3**: SEPA, as Scotland's environmental regulator, would expect Scottish Water to seek to meet full compliance and, each year, Scottish Water endeavours to achieve this at its wastewater treatment works. However, since the move to assessment against a full suite of final effluent standards at the start of the SR21 investment period, we have not met 100% compliance.

4.2.8 The WwTW permit compliance metric has varied between 95.2% and 97.2% - with a range of 16 to 28 failing works – in the last 5 years. We consider it best practice to take an average of recent performance when forming a typical performance for the start position in 2026/27. The four-year average at 96.2% has 22 of the 580 works on the Annual Monitoring Plan failing to meet permit final effluent standards and forms our start position for a typical year. Our FBP indicated a marginally better position of 96.4% which was expected to continue over the period. We continue to adopt the 96.4% figure for the position in first year of SR27.

4.2.9 In response to the challenge of the DD to make improvements in this outcome, we have reviewed the outcome position for 2032/33. By utilising £11m of the additional £168m funding allocation proposed in the DD, we propose to install additional monitoring and control equipment to identify risks earlier and to respond to these proactively, seeking to stretch performance to meet an expected outcome in a typical year to 96.7% (19 out of the 580 works failing permit final effluent standards).

4.2.10 With SEPA's focus on a broader range of WwTW compliance through EPAS, we will need to consider a replacing or supplementing the current measure and identifying the cost implications of this during SR27.

4.2.11 The projected outcomes for this metric are set out in Table 25.

Table 25: WwTW Permit Compliance (Final Effluent) (%)

Step	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33
FBP	97.2	96.4	96.4	96.4	96.4	96.4	96.4	96.4	96.4
DD			96.4	96.4	96.4	96.4	96.4	96.4	96.4
Outturn	97.2	96.0							
4-yr average	96.4	96.2							
DD response	97.2	96.0	96.2	**96.4**	**96.4**	**96.6**	**96.6**	**96.7**	**96.7**

4.2.12 **Conclusion**: We conclude that the DD did not set an alternative outcome but challenged Scottish Water to stretch its FBP outcome for the end of SR27 and in response, and through an allocation of £11m of the additional funding of £168m, we aim to improve the metric to 96.7% (and not more than 19 failing works) by 2032/33.

4.3 Serious Environmental Pollution Incidents (1.29)

4.3.1 We accept the 2032/33 outcome position of 4 in the DD for serious environmental pollution incidents (Cat. 1 & 2 water and waste water).

4.3.2 We note that the 4-year average is 7 and the latest year performance is 3 incidents and this reflects some variation year by year, with the DD profile reflecting position in the lower part of the range of 3 to 7 incidents.

4.3.3 The projected outcomes for this metric are set out in Table 26.

Table 26: Number of Serious Environmental Pollution Incidents

Step	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33
FBP	5	8	8	8	7	7	6	6	5
DD			8	5	5	5	4	4	4
Outturn	5	3							
4-yr average	8.8	7.0							
DD response	5	3	7	**5**	**5**	**5**	**4**	**4**	**4**

4.4 Environmental Pollution Incidents Wastewater (1.30)

4.4.1 We accept the expected outcome by 2032/33 in the DD of best in the last 3-years in the DD for environmental pollution incidents for wastewater (Cat 1 to 3). We note that the best outcome in recent years is 32.5 and not 31.5 as stated in the DD and so 32.5 is our projected outcome for 2032/33.

4.4.2 In response to the challenge to improve the outcome beyond that of the FBP, we plan to increase sewer level monitoring and enhanced analytics to enable early identification of potential service risks and proactive response to these. Extra monitoring introduces the potential to increase the overall number of EPIs in the short-term and so the process will involve a transition to identifying more and then addressing all potential EPIs before they have any environmental impact (i.e. become Cat 3 incidents). This initiative utilises £10m of the additional £168m funding allocation proposed in the DD.

Table 27: Environmental Pollution Incidents Wastewater (Cat 1-3) (Incidents per 10,000km Sewer Length)

Step	2021 -22	2022 -23	2023 -24	2024 -25	2025 -26	2026 -27	2027 -28	2028 -29	2029 -30	2030 -31	2031 -32	2032 -33
FBP	47.7	39.6	32.5	35.8	41.1	34.8	34.8	34.8	34.8	34.8	34.8	34.8
DD						34.8	34.2	33.7	33.1	32.6	32.0	31.5
Outturn	47.7	39.6	32.5	35.8	37.1							
4-yr average				38.9	36.2							
DD response	47.7	39.6	32.5	35.8	37.1	36.2	**35.6**	**35.0**	**34.4**	**33.7**	**33.1**	**32.5**

4.5 Sewerage Infrastructure Discharges (1.32)

4.5.1 **Summary:** For this outcome, the steps in the process to review the DD proposal are summarised in Table 28. The FBP proposed the removal of 150 UIDs resulting in a register position of 712 UIDs by the end of SR27. The DD did not provide an alternative but asked for Scottish Water and SEPA to engage further.

4.5.2 In response to the DD challenge we propose to remove a further 18 UIDs above that included in the FBP by 2032/33 utilising £33m of the additional £168m funding allocation proposed in the DD.

Table 28: Sewerage Infrastructure Discharges Summary Steps and 2032/33 UID Outcomes (Number)

Step	Stage	Outcome	Description
1.	FBP	712	A removal of 150 UIDs to attain a level of 712 by 2032/33
2.	DD	712	The DD did not propose an alternative performance level but asked Scottish Water to engage further with SEPA
3.	Rebased	704	The start position in 2026/27 is rebased from 862 to 854
4.	Revised	686	Following engagement with SEPA an additional 18 UID removals are proposed by the end of SR27 with £33m of the £168m additional funding identified in the DD.

4.5.3 **Review:** We step through our assessment as follows:

4.5.4 **Step 1**: The FBP planned to invest and remove 150 UIDs from the register, from a forecast of 862 to 712 by 2032/33.

4.5.5 In the FBP, the target number of UIDs was based upon assumptions on the scale of UID register at April 2027. The UID Register in Annual Return 2025 (December 2024 position) was 892 UIDs. At the time of developing the Final Business Plan and discussing UID requirements with SEPA, the 'live view' of the UID register identified 876 UIDs and that 301 of those were 'candidates' and required review. We predicted that the register would reduce by 41 UIDs through investment (completing in SR21) and that cleansing the register would remove 75% of candidates (226) generating an April 2027 UID register of 876 – 41 – 226 = 609.

4.5.6 A target of 150 UIDs for SR27 and ongoing development and study work for the next tranche of UID priorities was proposed appropriate to maintain progress. The target of 150 was to be met through UIDs completing post April 2027, including those commencing (but not counted) in SR21.

4.5.7 **Step 2**: The DD asked Scottish Water and to SEPA to discuss options to increase number of UIDs removals.

4.5.8 We understand that SEPA had indicated their expectation that about 25% of the UIDs in the register should be removed over each of the four regulatory periods, commencing with SR27. They considered that a failure to commit to delivering 25% of UIDs could leave Scottish Water short against its' long-term ambition to eliminate all UIDs.

4.5.9 In response to the FBP, SEPA set out an end of SR21 UID register position as circa 880 and indicated their preference for a quarter of these (or about 220) to be removed in SR27.

4.5.10 Since submitting the FBP, AR26 confirmed the number of UIDs as 888 (December 2025) and SR21 UID delivery and UID Register cleansing have continued. The current view of the April 2027 UID register is based upon an updated review of progress. 27 UIDs were removed in the AR26 update through SR21 investment with 34 further UIDs (61 total SR21 UIDs) to be addressed before April 2027. Cleansing activity is around 50% complete with 150 candidate UIDs reviewed. 40% of candidates have been confirmed as UIDs and, extrapolating this, 60% (181 UIDs) will be removed from the Register before April 2027 giving an updated projected position as 888 – 34 – 181 = 673. This generates a revised total of removals for the SR27 period as 168 UIDs (rather than 150) to maintain expected progress towards eliminating all UIDs over four regulatory periods.

4.5.11 We can demonstrate that there is no double-counting between SR21 and SR27 UID outputs. UIDs delivered before April 2027 are counted as SR21 outputs. UIDs that commence in SR21 but complete after April 2027 are counted once

as SR27 outputs. This ensures continuity of delivery while avoiding duplication in reporting.

4.5.12 **Step 3:** We expect to outturn with 854 UIDs by the end of SR21. We plan to address 34 UIDs in 2026/27 to achieve this. This rebasing would lead to a projected end of SR27 position of 704 on the register following the FBP planned removal of 150 UIDs during SR27.

4.5.13 **Step 4**. We project the register to be at 686 UIDs by the end of SR27, with the removal of 168 UIDs during SR27 relative to the FBP. The addition of 18 removals will involve an extra investment of £33m to that in the FBP, which is allocated from the £168m of additional funding identified in the DD.

4.5.14 We also note that register cleansing is on-going and anticipated to reduce the register size by up to 181 UIDs, reducing the register to 505 by 2032/33. For this reason, we proposed a focus on the number reduced rather than the register itself for reporting in SR27. We note that the DD did not confirm this line would be added to Table 1 as we had proposed in the FBP and would propose again for it to be added to aid monitoring in SR27.

4.5.15 The projected outcomes for this metric are set out in Table 29.

Table 29: Unsatisfactory Intermittent Discharge Register (Number)

Step	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33
FBP	893	882	862	823	800	793	773	747	712
DD			862	823	800	793	773	747	712
Outturn	893	888							
DD response	893	888	854	822	798	788	763	729	686

4.5.16 **Conclusion:** We conclude that:

- the FBP's proposal to remove 150 UIDs does not meet a revised assessment of the UID register and the scale of programme required to address 25% of UIDs over each of the next 4 investment periods.
- we propose to increase the number of removals from 150 to 168 and project a reduction of registered UIDs from 854 to 686 over SR27 enabled through an additional funding of £33m from the additional £168m funding allocation proposed in the DD.

5 Wastewater Flows

5.1 Introduction

5.1.1. In Wastewater Flows, the DD proposed four metrics for change as shown in Table 30 and their projected outcomes utilising £50m of the additional £168m funding allocation proposed in the DD in line with the DD expectations are discussed in this Section.

Table 30: Wastewater Flows Metrics Stretched or Questioned in the DD

Ref	Metric	Type
1.24	Annual internal flooding incidents	Annual
1.26	Annual external flooding incidents	Annual
1.25	Internal sewer flooding register (properties)	Register
1.27	External sewer flooding register (areas)	Register

5.2 Number of internal sewer flooding incidents (1.24)

5.2.2 We accept the 2032/33 outcome of 1.27 in the DD for internal sewer flooding incidents.

5.2.3 We note that the metric was particularly higher in the two years of 2020/21 and 2021/22. This coincided with more exceptional severe weather incident reports, for example in Edinburgh and Glasgow. The metric has since reduced to a lower level than prior to 2020/21. This lower level might be associated with less severe weather.

5.2.4 The DD focused on a 3-year average to 2024/25 of 1.35 as the starting position. Due to the variation of weather impact, we would look at a start position based on a 5-year average to 2025/26 which is 1.46 or 5-year average of 2019/20 and last 4-years to 2025/26 which is 1.48. The 4-year average since 2021/22 is 1.29.

5.2.5 We conclude that the start position of 1.35 in the DD is reasonable (as being in the range of 1.29 to 1.46), note its reduction to 1.33 for 2027/28 and note that the subsequent profile follows that of the FBP to 1.27 by the end of SR27.

5.2.6 We also note that we have previously reported annual internal sewer flooding incidents excluding severe weather, the metric for SR27 and its projections include severe weather incidents, though our projections are also based on data that excludes the exceptional severe weather impacts on our major cities observed in 2020/21 and 2021/22; and that the latter might need to be taken into consideration when assessing performance should such weather happen again.

5.2.7 The projected outcomes for this metric are set out in Table 31.

Table 31: Number of Internal Sewer Flooding Incidents (Number per 10,000 Connections)

Step	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33
FBP	2.15	1.42	1.57	1.05	1.60	1.57	1.53	1.52	1.51	1.50	1.49	1.48
DD						1.57	1.33	1.32	1.31	1.30	1.28	1.27
Outturn	2.15	1.42	1.57	1.05	1.12							
3-yr average			1.71	1.35	1.25							
4-yr average				1.55	1.29							
5-yr average					1.46							
DD response	2.15	1.42	1.57	1.05	1.12	1.46	**1.33**	**1.32**	**1.31**	**1.30**	**1.28**	**1.27**

5.3 Number of external sewer flooding incidents (1.26)

5.3.1 We accept the 2032/33 outcome of 9.52 in the DD for external sewer flooding incidents.

5.3.2 We note again that the metric was particularly higher in 2020/21 and 2021/22. This coincides with exceptional severe weather incident reports as was noted for internal sewer flooding incidents. The metric has since had a similar level to that prior to 2020/21.

5.3.3 The DD focused on a 3-year average to 2024/25 of 9.59 as the starting position. Due to the variation of weather impact, we would look at a 5-year average to 2025/26 which is 10.06 or a 5-year average of 2019/20 and the last 4-years to 2025/26 which is 9.78. The 4-year average since 2021/22 is 8.59.

5.3.4 We conclude that the start position of 9.59 in the DD is reasonable (as being in the range of 8.59 to 10.06) and that the subsequent profile follows that of the FBP to 9.52 by the end of SR27.

5.3.5 We welcome the inclusion of this in the list of Table 1 outcomes, though as a new annual metric it currently has a high level of uncertainty and so we will be looking to improve our baseline information in SR27 for SR33.

5.3.6 We also note that projections include severe weather incidents, though our projections are also based on data that excludes the exceptional severe weather impacts on our major cities observed in 2020/21 and 2021/22; and that the latter might need to be taken into consideration when assessing performance should such exceptional weather happen again. The projected outcomes for this metric are set out in Table 32.

Table 32: Number of External Sewer Flooding Incidents (Number per 10,000 Connections)

Step	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33
FBP	15.90	13.41	9.25	6.12	10.37	10.43	10.55	10.67	10.79	10.92	11.04	11.16
DD						10.43	9.52	9.52	9.52	9.52	9.52	9.52
Outturn					5.60							
3-yr average			12.85	9.59	6.99							
4-yr average				11.17	8.59							
5-yr average					10.06							
DD response	15.90	13.41	9.25	6.12	5.60	10.06	**9.52**	**9.52**	**9.52**	**9.52**	**9.52**	**9.52**

5.4 Number of internal properties at risk of sewer flooding (1.25)

5.4.1 We accept the 2032/33 outcome of 1.17 in the DD for the internal sewer flooding register.

5.4.2 The FBP forecast an outturn of 358 for 2025/26 with a further 360 additions and 323 removals by 2032/33 for there to be 394 properties on the register at the end of SR27. This would yield a metric of 1.47 at the end of SR27 similar to that forecast for 2026/27.

5.4.3 The DD proposed that the forecast metric be 1.17 at the end of SR27, equivalent to a register of 315 properties, and allocated an additional £50m to both internal and external sewer flooding to enable this. This would yield a metric of 1.17 at the end of SR27 similar to the outturn for 2024/25.

5.4.4 We have reviewed the projections following the 2025/26 outturn of 322 properties and the additional funding to form projections detailed in Appendix C.

- Based on the outturn for 2025/26, we have reprofiled the FBP to show an outturn of 1.29 in 2032/33.
- With the additional funding, our revised forecast from an outturn of 322 for 2025/26 assumes a further 350 additions and 357 removals by 2032/33 for there to be 315 properties on the register and metric outcome of 1.17 at the end of SR27. The addition of removals for the internal and external registers are stretching but achievable with the £50m extra funding in the DD.

5.4.5 The projected outcomes for this metric are set out in Table 33. While we accept the 2032/33 outcome of 1.17 in the DD, its profile over the period differs from that in the DD. The metric increases and then decreases over the period in Table 33, as it does for the equivalent profile in the FBP. This is a function of higher cost legacy projects towards the start of the period and the investment

profile being greater towards the end of the period and this profile will be reviewed as part of the Investment scheduling for the Delivery Plan.

Table 33: Number of Properties at Risk of Internal Flooding (Number per 10,000 Connections)

Step	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33
FBP	1.09	1.23	1.24	1.17	1.33	1.47	1.53	1.66	1.60	1.56	1.53	1.47
DD						1.47	1.35	1.31	1.28	1.24	1.20	1.17
Outturn	1.09	1.23	1.24	1.17	1.20							
DD response	1.09	1.23	1.24	1.17	1.20	1.29	**1.35**	**1.48**	**1.30**	**1.26**	**1.23**	**1.17**

5.5 Number of external areas at risk of sewer flooding (1.27)

5.5.1 We accept the 2032/33 outcome of 10.83 in the DD for the external sewer flooding register.

5.5.2 The FBP forecast an outturn of 3,002 areas for 2025/26 with a further 876 additions and 682 removals by 2032/33 for there to be 3,196 areas on the register at the end of SR27. This would yield a metric of 11.88 at the end of SR27 and marginally higher to that forecast for 2026/27.

5.5.3 The DD proposed that the forecast metric be 10.83 at the end of SR27, equivalent to a register of 2912 areas, and allocated an additional £50m to both internal and external sewer flooding to enable this. This would yield a metric of 10.83 at the end of SR27 similar to the outturn for 2024/25.

5.5.4 We have reviewed the projections following the 2025/26 outturn of 2,987 areas and the additional funding to form projections detailed in Appendix C:

- Based on the outturn for 2025/26, we have reprofiled the FBP to show an outturn of 11.38 in 2032/33.
- With the addition of funding, our revised forecast from an outturn of 2,987 for 2025/26 assumes a further 756 additions and 831 removals by 2032/33 resulting in 2,912 areas on the register and metric outcome of 10.83 at the end of SR27. The addition of removals for the internal and external registers are stretching but achievable with the £50m extra funding in the DD.

5.5.5 The projected outcomes for this metric are set out in Table 34. While we accept the 2032/33 outcome of 10.83 in the DD, its profile over the period differs from that in the DD. The metric increases and then decreases over the period in Table 34, as it does for the equivalent profile in the FBP. This is a function of the investment profile being greater towards the end of the period and this

profile will be reviewed as part of the Investment scheduling for the Delivery Plan.

5.5.6 We welcome the inclusion of this metric in the list of Table 1 outcomes. However, as a new register metric it currently includes a legacy of areas that will need to be reassessed and will lead to changes in the register, as indicated our recent Annual Return (AR26).

Table 34: Number of Areas at Risk of External Flooding (Number per 10,000 Connections)

Step	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33
FBP	9.50	9.99	10.34	10.80	11.16	11.35	11.67	12.13	12.40	12.69	12.48	11.88
DD				10.82		11.35	11.28	11.18	11.09	11.00	10.91	10.83
Outturn	9.50	9.99	10.34	10.80	11.04							
DD response	9.50	9.99	10.34	10.82	11.10	11.29	**11.31**	**11.69**	**11.57**	**11.79**	**11.50**	**10.83**

6 Carbon Emissions

6.1 Overview

6.1.1 In carbon emissions the DD proposed five metrics for change to the FBP as shown in Table 35. There are two main metrics that drive the change - investment emissions (ref 1.39) and operational emissions – wastewater (ref 1.36). Changes in these two metric projections have consequential impact on the other three metrics in Table 35.

6.1.2 On the two main metrics:

- We do not accept the changes made by the DD to the projections for investment emissions (which would carry through into the projections for the Net Zero Emissions metric). We update for the 2025/26 outturn and the additional outputs associated with the additional £168m funding allocation proposed in the DD. As with the FBP our projections include WCB for which we estimate the investment emissions to be 46,433 tCO2e in the period.
- We note that there was no change in the DD to the FBP projections for operational emissions with WCB included. In April 2026 there was a material update to the emission factors that are sourced externally and associated with wastewater nitrous oxide process emissions. This will be reflected in Scottish Water's reported carbon footprint from 2026-27 (AR27) and can also be used to update the projections and factors to be used in the new operational emissions metric for SR27. To minimise the risk of duplicate reporting using different factors between statutory reporting and regulatory reporting we recommend this is addressed through further discussion between WICS and Scottish Water.

Table 35: Carbon Emission Stretched or Questioned in the DD

Ref	Metric	Type
1.34	Net zero emissions(tCO2e)	Annual
1.36	Operational emissions (wastewater) (tCO2e)	Annual
1.37	Percentage reduction in operational emissions compared to 2006-07 baseline	Annual
1.38	Operational emissions (net emissions)	Annual
1.39	Investment emissions (tCO2e)	Annual

6.2 Investment Emissions (1.39)

6.2.1 **Summary:** For this outcome the steps in the process to review the DD proposal are summarised in Table 36. The FBP proposed a projection of investment emissions consistent with the investment programme and expected carbon conversion factors with 143,597 tCO2e investment emissions in 2032/33 including the West Central Bioresource (WCB) project. The DD considered that Scottish Water should be more ambitious in this area and reduced the projected emissions to 131,108 tCO2e (excluding WCB) by reference to information from

some England & Wales companies plus 25,000 tCO2e for WCB. We found this assessment to be unreliable and that it did not recognise the unprecedented level of ambition in this area in our plan.

6.2.2 Our rebase of the projections with 2025/26 outturns does not materially affect the projections ahead of a reassessment of the investment programme scheduling for the Delivery Plan. Our revised projections include the extra investment emissions from the additional outputs and outcomes of the additional £168m funding allocation proposed in the DD.

Table 36: Investment Emissions Summary Steps and 2032/33 Outcomes (tCO2e)

Step	Stage	Outcome	Description
1.	FBP	143,597	Based on the investment profile and conversion factors the FBP investment emissions over SR27 is 882,657 tCO2e
2.	DD	131,503	The DD refers to a reduction of 12.7% on the base of 150,364 tCO2e (including WCB) based on three steps and using information from some England & Wales companies' plans
3.	Rebased	143,597	The outturn for 2025/26 does not change our 2032/33 projected outcome
4.	Revised	145,654	The additional outputs related to the addition of £168m increase the investment emissions over the period by 1.7%.

6.2.3 **Review:** We step through our assessment as follows:

6.2.4 **Step 1**: The FBP projected investment emissions (including WCB) is 882,657 tCO2e over SR27 and 143,597 tCO2e in 2032/33. When compared to the annual forecast value of 150,634 tCO2e for 2026/27, this is a reduction of 7,067 tCO2e or 4.7% in absolute carbon (tCO2e) or 22% in carbon intensity (tCO2e/£ spent).

6.2.5 This took account of four key elements relating to investment carbon emissions: (a) Unit costs; (b) Unit volumes, (c) Conversion factors and (d) Mix effect.

6.2.6 *Unit cost:* A change in unit cost is a *price effect* in buying materials. As a price effect it does not change the unit volume and therefore quantity of materials; these materials are converted to carbon emissions with no impact on the change to the projected annual quantifies of carbon emissions. For example, if the FBP outcomes were retained and an efficiency factor applied to capital investment, the unit cost or price effect would have no effect on the projected volume of materials or carbon emissions.

6.2.7 *Unit volumes:* A change in unit volumes is a non-price or *volume effect* in buying materials. As a volume effect it does change the unit volume and therefore quantity of materials; the change material volumes would then be converted to carbon emissions with an impact on the projected quantifies of carbon emissions. For example, if the FBP outputs and outcomes were increased through extra capital investment delivering additional outcomes (such as the

addition of WCB or £168m of additional funding for allocation in the DD), this would cause a volume effect that would increase the volume of materials and carbon emissions.

6.2.8 *Conversion factors:* These factors are applied to the volumes of different materials to convert them into levels of carbon emissions. The factors are preset (externally) for different types of materials which are updated through periodic data release. For example, a new set of factors, with no change to unit cost or unit volume, would affect the level of carbon emissions.

6.2.9 *Mix effect:* A change in the distribution of unit volumes across the different conversion factors. While the unit cost and volume might be the same, the mix effect addresses movements in the use of lower or higher carbon materials. For example, the capital measure is principally geared towards addressing movements from higher to lower carbon versions of the materials most prevalent in capital construction projects (i.e. steel, concrete and fuels).

6.2.10 The FBP investment emissions were then formed taking account of these four elements.

6.2.11 **Step 2**: The DD proposes reducing projected investment emissions to 131,108 tCO2e in 2032/33 prior to any addition for WCB (a reduction of 13.0% from the 150,634 tCO2e forecast for 2026/27 in the FBP). This is based on a methodology that applies three adjustment factors to Scottish Water's Final Business Plan (FBP) projections, using evidence from selected water company plans in England & Wales. The DD also assumes that WCB will contribute 25,000 tCO2e of investment emissions, compared with 46,433 tCO2e in Scottish Water's FBP over the SR27 period, with a small contribution to investment emissions in 2032/33 to yield 131,503 tCO2e in 2032/33 (and a reduction of 12.7% from 2026/27).

6.2.12 The DD starts with the FBP assumption that investment emissions fall by 7,067 tCO2e between 2026/27 and 2032/33. It then increases this reduction by applying three factors. The first factor assumes that Scotland should achieve the same rate of investment-emissions reduction as certain companies in England & Wales. The second factor assumes that additional efficiency savings automatically lead to lower embodied carbon. The third factor repeats the same England & Wales comparison used in the first multiplier. Combined, these adjustments increase the reduction from 7,067 tCO2e to around 19,260 tCO2e. This is a reduction of 12.8% from the 150,634 tCO2e forecast for 2026/27 in the FBP which is close to the DD's reported 12.7% figure.

6.2.13 We do not consider this approach to be robust. First, the factor formed from comparison with England & Wales is applied twice, effectively counting the same assumption two times. Second, the efficiency adjustment is a price effect,

not a volume effect. Lower costs do not automatically mean fewer materials are used, and therefore do not automatically reduce embodied carbon emissions. In contrast, the additional £168m investment proposed in the DD would increase outputs and material volumes and would therefore be expected to increase, rather than reduce, investment emissions. We also consider the benchmarking evidence to be unreliable. The DD uses the carbon reduction from a small number of specific programmes in English and Welsh companies, rather than whole-company investment plans, creating a risk of potential imbalance in the evidence base that will be above average. Further details are included in Appendix D.

6.2.14 Scottish Water's FBP already contains a highly ambitious investment-carbon commitment. Despite proposing an investment programme that is more than 30% larger than SR21, the FBP forecasts a 4.7% reduction in absolute investment emissions (tCO2e) and a 22% reduction in carbon intensity (tCO2e/£spent). We have not identified equivalent reductions across whole investment programmes elsewhere in the sector.

6.2.15 Scottish Water's proposal for reduced carbon emissions is neither replicated nor matched in England & Wales. There is only one water company in England & Wales that has offered a capital emissions intensity reduction for its investment programme. For an equivalent metric, South West Water has a 5% reduction in intensity over 5 years, which is significantly less than the 22% intensity reduction of Scottish Water. Three other companies in England & Wales have only a small number of named programme areas covered and do not cover their whole investment programmes.

6.2.16 The available evidence in the DD does not appear to demonstrate that there is an equivalent or greater reduction in capital intensity across the whole investment programme in any water company in England & Wales. Scottish Water's business plan stands out as uniquely progressive and ambitious in this regard. The evidence in the DD does not appear to support moving the 46,433 tCO2e figure in the FBP for WCB to 25,000 tCO2e.

6.2.17 For these reasons, we do not believe there is a sound evidential basis for reducing the FBP forecast of 143,597 tCO2e in 2032/33. Our analysis indicates that the original FBP projection remains appropriate. When the additional outputs and outcomes associated with the DD's proposed £168m funding are included, projected investment emissions increase modestly to 145,654 tCO2e by 2032/33. We therefore consider this revised projection to be the most realistic and evidence-based estimate of investment emissions over SR27.

6.2.18 **Step 3**: Our rebase of the projections with 2025/26 outturns does not affect the projections ahead of a reassessment of the investment programme scheduling for the Delivery Plan. The investment emissions projected for SR27 remains

as they were in the FBP, with a sum of 882,657 tCO2e over SR27. The investment emissions for WCB is 46,433 tCO2e (and not 25,000 tCO2e figure assumed in the DD).

6.2.19 **Step 4:** Our revised projections include the additional investment emissions from the additional outcomes of the additional £168m of funding allowed for in the DD with a sum of 897,900 tCO2e over SR27. The investment emissions for WCB is 46,433 tCO2e (and not 25,000 tCO2e assumed in the DD).

6.2.20 The projected outcomes for this metric are set out in Table 37.

Table 37: Investment Emissions (tCO2e)

Step	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33
FBP	105,395	160,673	150,634	149,848	149,062	148,277	146,717	145,157	143,597
DD		-	150,634	151,955	142,025	136,055	134,581	134,429	131,108
DD response	105,395	111,140	150,634	153,071	151,994	150,946	149,164	147,397	145,654

6.2.21 **Conclusion:** We conclude that:

- the DD's proposal to reduce investment emissions to 131,108 tCO2e at the end of 2032/33 is not appropriate as it is based on analysis that is unreliable.
- we have updated the projections for the additional outputs, outcomes and expenditure associated with the additional £168m funding allocation proposed in the DD with the investment emissions in 2032/33 projected to be 145,654 tCO2e.

6.3 Operational Emissions - Wastewater (1.36)

6.3.1 Our FBP set out projections for this metric which included a reduction of 27,000 tCO2e per year for the WCB project from 2031/32 predominantly due to the closure of the sludge dryer.

6.3.2 The DD sets out projections for operational emissions without WCB. We note that the DD therefore added 27,000 tCO2e back in for 2031/32 and for 2032/33 for this metric relative to the FBP. When WCB is included, 27,000 tCO2e would be removed to return it to the FBP projection for 'operational emissions – wastewater' for 2031/32 and 2032/33.

6.3.3 If WCB was to be included this also impacts on the projections for following metrics:

- Net zero emissions (tCO2e) (1.34)

- Percentage reduction in operational emissions compared to 2006/07 baseline (1.37)
- Operational emissions (net emissions) (1.38).

6.3.4 We note that the conversion factors applied to wastewater process emissions have been updated and recently adopted in the UK Water Sector's accounting methods. This presents a material change that Scottish Water will use to report its carbon footprint in line with Statutory Reporting Requirements from 2026/27 (AR27). The analysis in the DD and this response retain the same factors as those in the FBP and we would welcome further discussion on alignment of reporting ahead of the Final Determination as we recommend amendment of the operational emissions – wastewater metric to reflect the revised process emission factor.

7 Developing Measures

7.1 Introduction

7.1.1 The list of 6 outcomes referred to as being in development in the DD are as follows:

1.06	Communities
1.22	WRAP
1.33	River water quality
1.42	Biodiversity outcomes
1.43	Resource recovery
1.44	Asset health (tracker)

7.2 Communities - ABC Tracker (1.06)

7.2.1 The DD states an expectation on Scottish Water to develop and agree on a suitable community experience measure with stakeholders in the first year of the 2027-33 regulatory period for inclusion in the delivery plan for the second year of the period, 2028/29. Scottish Water plan to meet this expectation through the Awareness and Behaviour Change (ABC) tracker.

7.2.2 The ABC tracker has progressed materially through clarification of its purpose and testing of its approach. Through stakeholder engagement with the Independent Customer Group, Consumer Scotland and WICS, Scottish Water has established a plan to move from development into shadow reporting and then reported performance in the first year of SR27 to enable its inclusion in the delivery plan from the second year (2028/29).

7.2.3 We also consider that it is important to distinguish between the ABC tracker and a measure of wider community engagement. The ABC tracker is a way of understanding how customers and communities are engaging with Scottish Water and changing behaviours during SR27. However, it does not cover all aspects of customer and community engagement. Scottish Water therefore proposes to continue developing a complementary measure or reporting approach for community engagement, working with Consumer Scotland, the Independent Customer Group and WICS during SR27.

7.2.4 For the start of SR27 there will be no available baseline set of projections for the ABC tracker. These will be introduced in the first two years of SR27

7.3 Water Supply Reported Risk - WRSS (1.22)

7.3.1 The DD accepted the FBP's projected outcomes for the WRAP but further discussion between DWQR, WICS and Scottish Water has established that it is not yet ready for application as a performance monitoring measure form the

start of SR27. The measure will be developed for introduction within the first two years of SR27.

7.3.2 Scottish Water is proud of its work with DWQR and WICS in developing a risk assessment for its water supply. In the FBP, we provided a base figure for this WRSS measure (previously known as water risk assessment platform (WRAP)), which we also provided some projections forward. In its DD, WICS indicated its acceptance of these projections.

7.3.3 Following further discussion and agreement with DWQR and WICS on the need for this measure to be developed to be a more complete and reliable measure of water supply risk for use in performance monitoring, we plan to develop it further and introduce the Water supply reported risk measure in the early part of SR27. It remains a part of our commitment to report unsatisfactory levels of risk in water supply under Scotland's Water Supply Regulations.

7.3.4 For the start of SR27 there will be no available baseline set of projections. These will be introduced in the first two years of SR27 for commencement in April 2029. Further details are provided in Appendix E.

7.4 River Water Quality (1.33)

7.4.1 The DD states an expectation that Scottish Water will develop and agree a river water quality measure with SEPA and WICS ahead of the start of the 2027-33 regulatory period. Scottish Water confirms the measure will not be developed for the start of SR27 and it has been referred to SEPA given their regulatory oversight in this area.

7.4.2 In the development of proposed measures for SR27 (in early 2025), we explained that this measure is in use in England & Wales to measure progress against the WINEP (Water Industry National Environmental Programme) which includes a very large scale WwTW enhancement programme, mainly aimed at reducing phosphorus input to receiving waterbodies. There is no such programme in SR27 in Scotland and therefore we do not intend to develop this proposed metric.

7.4.3 Scottish Water is also concerned about the proposed title of a 'river water quality measure' given SEPA's key role in measuring and reporting River Water Quality under the River Basin Management Plan / Water Framework Directive. Scottish Water understands that SEPA agrees that this measure is not required for SR27.

7.4.4 For the start of SR27 there will be no available baseline set of projections.

7.5 Biodiversity Outcomes (1.42)

7.5.1 The DD states an expectation that the development by Scottish Water of a biodiversity measure in partnership with NatureScot could lead to the setting a profile in the FD based on the information available at that time. Scottish Water confirms that the measure will not be developed for the start of SR27. The measure will be developed for introduction within the first two years of SR27

7.5.2 Scottish Water has made material progress in developing biodiversity reporting for SR27. The interim biodiversity land-use measure in line 1.41 provides an input-based view of land positively managed for nature. The final measure in line 1.42 is intended to move beyond simple area reporting and provide a more outcome-based assessment of biodiversity improvement, reflecting the relative benefit or gain from interventions such as peatland restoration, woodland creation, biodiversity improvement on operational sites, whole farm management plans, wider land management and nature-based solutions.

7.5.3 However, there are important reasons why this measure continues to be developed and reported during SR27. First, there is not yet a formal national biodiversity metric in use in Scotland and Scottish Water is working with NatureScot, Scottish Government and other stakeholders as national approaches continue to develop. Secondly, biodiversity outcomes take time to mature with woodland creation, peatland restoration and habitat enhancement may take several years before the ecological change can be confirmed and verified. Thirdly, the measure requires robust criteria for habitat type, condition, distinctiveness, connectivity and strategic significance, together with a practical approach to verification and avoiding double counting across different delivery routes.

7.5.4 For the start of SR27 there will be no available baseline set of projections for the biodiversity gain measure (1.42). These will be introduced in the first two years of SR27.

7.6 Resource Recovery (1.43)

7.6.1 The DD identified the Resource Recovery metric as a developing measure for SR27 that will be strongly influenced by the West Central Bioresource project. Scottish Water agrees with this position.

7.6.2 Resource Recovery is an important measure because it can help demonstrate how Scottish Water is contributing to Scotland's circular economy and net zero ambitions. It covers activities within our core water and wastewater services that minimise waste and maximise the value of materials, energy and by-products generated through our operations. This may include internal reuse within Scottish Water assets and processes, and external recovery where materials or energy are supplied into the wider Scottish economy.

7.6.3 Scottish Water proposes to continue developing a Resource Recovery metric as a tracker measure during SR27, using a common carbon-based metric, expressed in tCO2e. This would allow different recovery streams to be aggregated consistently that are focussed on the net carbon benefit relative to a defined baseline and avoid double counting with Scottish Water's operational emissions metrics.

7.6.4 The initial framework will focus on areas where data are sufficiently mature and where Scottish Water has influence over outcomes. It is expected to exclude activities driven mainly by external market conditions, financial value alone, hypothetical technologies not yet demonstrated at scale, and third-party recovery activities where displacement benefits cannot be evidenced.

7.6.5 For the start of SR27 there will be no available baseline set of projections.

7.7 Asset Health Tracker (1.44)

7.7.1 The DD proposes that the Asset Health Tracker is not yet sufficiently mature, useful or meaningful as a performance measure for assessing the condition of the asset base or how asset maintenance investment affects that condition and that it should continue to be developed during SR27. Scottish Water accepts the proposal to continue the development of an asset health measure during SR27.

7.7.2 We will continue the development from "calendar-age" based approaches toward "effective-age" approaches to better reflect asset condition, performance, criticality, environment and operational context. This will also include further work to improve the completeness, quality and consistency of asset data, and to ensure that movements in the measure can be explained transparently as either genuine asset health change, replacement activity, life extension, or data improvement.

7.7.3 We will also continue to develop and report Table 3b Equipment Health Index that provides a more granular view of the asset base and look to expand the asset coverage over SR27.

7.7.4 For the start of SR27 there will be no available baseline set of projections.

Appendix A: Update to Table 1 Following Review of Draft Determination's Proposals

The full set of projected outcomes is set out in Table A1 for all 49 metrics referenced in the FBP and DD. The table includes the FBP forecast and outturn for 2025/26. The forecasts in white are the same as in the FBP and updated forecasts are those in green. The final column sets out the coding reference used in Annex 3 to group lines for the review and summary.

A.	DD Accepted: 15 service outcomes and 3 carbon emission outcomes
B.	DD Stretched: 16 service outcomes and 2 carbon emission outcomes
C.	DD Questioned: 2 service outcomes and 3 carbon emission outcomes
D.	DD sought further development: 6 service outcomes
E.	DD Rejected as unnecessary: 2 to be unnecessary

			Forecast	Actual	Forecast Level of Service							DD
Ref.	Level of Service	Unit	2025-26	2025-26	Year -1 2026-27	Year 1 2027-28	Year 2 2028-29	Year 3 2029-30	Year 4 2030-31	Year 5 2031-32	Year 6 2032-33	Ref Code
1.01	dCEM Developer Customer Experience Measure	Number	83.08	84.79	83.25	83.42	83.58	83.75	83.91	84.07	84.23	A
1.02	nhCEM Non Household Customer Experience Measure	Number	89.46	87.83	89.56	89.67	89.77	89.87	89.97	90.07	90.17	A
1.03	R-MeX Retailer Experience Measure	Number	9.0	8.6	9.0	9.0	9.0	9.0	9.0	9.0	9.0	A
1.04	hCEM Household Customer Experience Measure	Number	87.50	87.52	87.62	87.75	87.87	87.99	88.11	88.23	88.35	A
1.05	UKCSI UK customer Satisfaction Index	%	77.9%	76.9%	77.9%	77.9%	77.9%	77.9%	77.9%	77.9%	77.9%	A
1.06	Communities experience measure [measure to be proposed]	Not available	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	D
1.07	Percentage reduction of three-year average leakage	%	0.6%	0.08%	0.9%	1.7%	3.0%	4.4%	6.3%	8.5%	11.1%	B
1.08	Leakage reduction in areas with supply-demand balance deficit	%	0.8%	0.2%	0.5%	0.9%	2.5%	4.5%	6.9%	9.7%	13.1%	B
1.09	Percentage reduction of consumption at non-household premises	%	1.8%	-1.7%	3.3%	4.0%	4.9%	6.7%	9.1%	12.1%	14.9%	A
1.10	Three-year average per capita consumption	l/person /d	178	178	178	177	176	176	175	175	174	B
1.11	Number of properties on the low pressure register	Number	28	15	25	20	20	20	20	20	20	B

			Forecast	Actual	Forecast Level of Service							DDR
Ref.	Level of Service	Unit	2025-26	2025-26	Year -1 2026-27	Year 1 2027-28	Year 2 2028-29	Year 3 2029-30	Year 4 2030-31	Year 5 2031-32	Year 6 2032-33	Ref Code
1.12	Unplanned interruptions greater than 6 hours, excluding 3rd party	Number	7,000	5,169	5,500	5,500	5,400	5,300	5,200	5,100	5,000	B
1.13	Average minutes lost due to water supply interruptions (over 3 hours)*	min	15.0	9.5	11.6	11.4	11.1	10.8	10.5	10.3	10.0	B
1.14	Repeat interruptions to water supply	Number	240	221	231	243	251	256	257	242	221	B
1.15	Customers supplied by systems not capable of meeting demand during a worst historic drought	Number	2,775,000	2,790,206	2,805,000	2,830,000	2,852,000	2,876,000	2,896,000	2,914,000	2,564,000	A
1.16	Customers supplied by systems not capable of meeting peak demand	Number	1,237,000	948,585	876,000	883,000	891,000	913,000	921,000	926,000	876,753	A
1.17	Taste and odour contacts	Number	0.51	0.52	0.51	0.51	0.50	0.49	0.48	0.47	0.46	B
1.18	Discolouration excluding aeration contacts	Number	2.11	2.29	2.17	2.11	2.05	1.99	1.93	1.86	1.80	B
1.19	Estimated number of lead pipes remaining in public network	Number	45,154	45,696	43,154	40,154	37,154	34,154	31,154	28,154	25,154	A
1.20	Indicator of lead in customers supply pipes	%	97.940%	98.200%	98.014%	98.035%	98.058%	98.082%	98.106%	98.129%	98.153%	A
1.21	Total drinking water compliance	%	99.916%	99.910%	99.920%	99.935%	99.940%	99.945%	99.950%	99.955%	99.960%	B
1.22	Drinking water quality risks across all systems above long-term tolerable threshold.	Number	5,455	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	D
1.23	Number of DWQR declared incidents	Number	31	36	30	30	29	28	27	26	25	A
1.24	Number of internal sewer flooding incidents	Number	1.60	1.12	1.46	1.33	1.32	1.31	1.30	1.28	1.27	B
1.25	Number of properties at risk of internal flooding	Number	1.33	1.19	1.29	1.35	1.48	1.30	1.26	1.23	1.17	B
1.26	Number of external sewer flooding	Number	10.37	5.60	10.06	9.52	9.52	9.52	9.52	9.52	9.52	B
1.27	Number of areas at risk of external flooding	Number	11.16	11.04	11.29	11.31	11.69	11.57	11.79	11.50	10.83	B
1.28	Percentage compliance with SEPA discharge permits	%	96.37%	96.03%	96.37%	96.37%	96.37%	96.55%	96.55%	96.72%	96.72%	C
1.29	Number of serious pollution incidents	Number	8	3	7	5	5	5	4	4	4	B
1.30	The total number of pollution incidents from a sewerage asset affecting the water environment	Number	41	37	36.2	35.6	35.0	34.4	33.7	33.1	32.5	B
1.31	Percentage unsatisfactory sludge disposal	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	A
1.32	Sewerage infrastructure discharges (UID register)	Number	882	888	854	822	798	788	763	729	686	C
1.33	River water quality	Not available	0	0	0	0	0	0	0	0	0	D

			Forecast	Actual	Forecast Level of Service							DDR
Ref.	Level of Service	Unit	2025-26	2025-26	Year -1 2026-27	Year 1 2027-28	Year 2 2028-29	Year 3 2029-30	Year 4 2030-31	Year 5 2031-32	Year 6 2032-33	Ref Code
1.34	Net Zero Emissions	tCO2e	355,158	318,151	319,416	310,153	269,454	258,228	252,132	211,398	200,183	B
1.35	Operational emissions (water)	tCO2e	44,591	49,424	37,267	34,335	23,698	21,760	20,985	10,774	9,688	A
1.36	Operational emissions (wastewater)	tCO2e	157,419	157,937	140,224	133,278	108,350	103,722	101,322	74,735	71,291	C
1.37	Percentage reduction in operational emissions compared to 2006-07 baseline	%	56.28%	55.12%	61.58%	63.72%	71.42%	72.84%	73.53%	81.49%	82.47%	C
1.38	Operational emissions (net emissions)	tCO2e	194,485	207,011	168,782	157,082	117,460	107,282	102,968	64,001	54,529	C
1.39	Investment emissions	tCO2e	160,673	111,140	150,634	153,071	151,994	150,946	149,164	147,397	145,654	B
1.40	Carbon capture/sequestration	tCO2e	-7,524	-350	-8,708	-10,531	-14,587	-18,200	-19,339	-21,508	-26,450	A
1.41	Biodiversity and Nature Based Solutions (interim measure) - land	hectares	0	0	0	750	1,500	2,250	3,000	3,750	4,500	A
1.42	Biodiversity and Nature Based Solutions (final measure)	Not available	0	0	0	0	0	0	0	0	0	D
1.43	Resource recovery	Not available	0	0	0	0	0	0	0	0	0	D
1.44	Equipment/asset health index	Score	29.26	0	29.26	29.45	29.78	29.81	29.71	29.64	29.59	D
1.45	Estimated number of lead pipes removed from public network	Number	n/a	n/a	0	3,000	6,000	9,000	12,000	15,000	18,000	A
1.46	Unsatisfactory intermittent discharges removal	Number	n/a	n/a	0	32	56	66	91	125	168	E
1.47	New net operational metric	tCO2e	217,127	241,975	215,750	213,241	159,675	154,009	148,884	99,523	92,816	A
1.48	Investment intensity emissions	Percentage	85.46	66.00	82.54	79.61	73.46	67.43	61.53	56.03	50.66	A
1.49	Strategic Tracker	Index to 100	0.00	0.00	0.01	7.92	11.24	13.90	16.65	18.77	22.70	E

Appendix B: Update of Repeat Interruptions to Supply

Introduction: We explain our review and update of the projected outcome score for the new Repeat Interruptions to Supply metric/ register for SR27 in more detail. This follows the DD proposal and challenge for Scottish Water to stretch this outcome further and provide more information on its projections for this metric.

For the FBP the metric had a forecast score of 240 reported in 2025/26. Additions were assumed to be 30pa and reductions were assumed to remove 210 postcodes aligned to the km of mains rehabilitation and over a period of seven years to 2032/33. With 210 postcode additions and reductions over the period from 2025/26 to 2032/33, the projected score was 240 postcodes at the end of SR27. With around 70% of the kms of mains rehabilitation scheduled for the latter 3 years of SR27, we allocated a similar percentage (c.70%) of postcodes removals to the latter 3- years of SR27. This formed the projection of additions and subtractions shown in Table B1.

Table B1: Projections of score, additions and subtractions for the FBP.

			87	114	135	156	267	308	
	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	Total
Additions		30	30	30	30	30	30	30	210
Reductions		30	0	0	55	45	40	40	210
Score	**240**	**240**	**270**	**300**	**275**	**260**	**250**	**240**	

Review: Our review of the historical data has led to several revisions to the position set out in the FBP as we have better understood the information and properties of this metric. The historic elements used to form the score are summarised, in Table B2. In this table the 2026/27 figures are stated as the averages of the outturns values across the period 2021/22 to 2025/26. The lines in Table B2 are as follows:

- Additions (mains) are the contacts that meet the number of postcode threshold level 4 of the metric definition (i.e. Ten or more customer contacts in 3 years or six or more customer contacts in 1 year). Its historic average is 59 p.a.
- Reductions (mains) has two components. The first component (Removals) is the postcodes removed through investment through the mains rehab programme. The second component (Balance) is the postcodes that fall out of the definition of the threshold from one year to the next. These have a historic average of 16 and 34 respectively and therefore combined total of 50 p.a.
- Score (mains) is its previous score plus Additions (mains) less Reductions (mains).
- Score (other: reflects the net additions and reductions that are related to contacts in the postcode that are not mains-related causes. Its historic average is 60 p.a.
- Score (total) is the sum of the Score (mains) and Score (other).

We note that the historic Score (total) has been updated since the FBP as a result of this review. This is due to observing that new postcodes introduced by Royal Mail had not been correctly accounted for in the score. The outturn score for 2024/25 is 200 postcodes and the latest years' outturn score is 221 for 2025/26.

Table B2: Historic score formation of the score between mains and non-mains additions and reductions

Rehab length (kms)		68	87	113	117	90	90
	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
Additions (mains)		80	75	56	35	50	59
Removals		*7*	*5*	*28*	*21*	*19*	*16*
Balance		*32*	*35*	*29*	*54*	*29*	*34*
Reductions (mains)		39	40	57	75	39	50
Score (mains)	**116**	**157**	**192**	**191**	**151**	**162**	**171**
Score (other)	56	58	76	59	49	59	60
Score (total)	**172**	**215**	**268**	**250**	**200**	**221**	**231**

Conclusion: In the historic period 2021/22 to 2025/26 we observed 6 km per postcode removals. To cover greater AC mains replacement and emergency mains works (e.g. flooding) as well as postcodes with repeat contacts, we have assumed 6.6 km per postcode removals in the projection for the Removals element. All other input elements for the projection of the Score (total) are assumed to occur at the historic average pa.. Table B3 shows the resultant projection for this metric. We note that the elements assumed in the projections to be constant are expected to vary about these values across the period when reporting the outturn Score (totals) through SR27.

Table B3: Projected score formation of the score between mains and non-mains additions and reductions

Rehab length (kms)		90	87	114	135	156	267	308
	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33
Additions (mains)		59	59	59	59	59	59	59
Removals		*16*	*13*	*17*	*20*	*24*	*40*	*46*
Balance		*34*	*34*	*34*	*34*	*34*	*34*	*34*
Reductions (mains)		50	47	51	54	57	74	80
Score (mains)	**162**	**171**	**183**	**191**	**196**	**197**	**182**	**161**
Score (other)		60	60	60	60	60	60	60
Score (total)	**221**	**231**	**243**	**251**	**256**	**257**	**242**	**221**

Appendix C: Update of Internal and External Flooding Register Outcomes

In this Appendix the figures presented are those used to form the projections for the two flooding at risk metrics in Section 5 of Annex 3. This is presented for the rebase with 2025/26 outturns and with the additional funding from the DD.

Updates projections for number of internal areas at risk of sewer flooding (1.25)

Rebase without extra funding

Table C1: Rebase without extra funding

	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33
Baseline	314	322	346	362	397	381	371	362	346
	1.17	1.20	1.29	1.35	1.48	1.42	1.38	1.35	1.29

ARR Properties		25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33
Baseline		314	322	346	362	397	381	371	362
Additions 1 in 10		21	50	50	50	50	50	50	50
Removals		13	26	34	15	66	60	59	66
	Total	**322**	**346**	**362**	**397**	**381**	**371**	**362**	**346**

Rebase with extra funding

Table C2: Rebase with extra funding

	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33
Baseline	314	322	346	357	387	366	351	337	315
	1.17	1.20	1.29	1.33	1.44	1.36	1.30	1.25	1.17

ARR Properties		25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33
Baseline		314	322	346	357	387	366	351	337
Additions 1 in 10		21	50	50	50	50	50	50	50
Removals		13	26	39	20	71	65	64	72
	Total	**322**	**346**	**357**	**387**	**366**	**351**	**337**	**315**

Note the specific profiles will be updated for the Delivery Plan once the Investment Programme has been confirmed.

Updates projections for number of external areas at risk of sewer flooding (1.27)

Rebase without extra funding

Table C3: Rebase without extra funding

	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33
Baseline	2906	2987	3037	3104	3206	3259	3318	3240	3060
	10.80	11.10	11.29	11.54	11.92	12.12	12.34	12.05	11.38

ARR Impact		25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33
Baseline		2912	2987	3037	3104	3206	3259	3318	3240
Additions		90	108	108	108	108	108	108	108
Removals		15	58	41	6	55	49	186	288
	Total	2987	3037	3104	3206	3259	3318	3240	3060

Rebase with extra funding

Table C4: Rebase with extra funding

	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33
Baseline	2906	2987	3037	3080	3158	3186	3220	3117	2912
	10.80	11.10	11.29	11.45	11.74	11.84	11.97	11.59	10.83

ARR Impact		25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33
Baseline		2912	2987	3037	3080	3158	3186	3220	3117
Additions		90	108	108	108	108	108	108	108
Removals		15	58	65	30	80	74	211	313
	Total	2987	3037	3080	3158	3186	3220	3117	2912

Note the specific profiles will be updated for the Delivery Plan once the Investment Programme has been confirmed.

Appendix D: Further Details of our Review of the Investment Emissions Reduction

The DD applied three factors to enhance the reduction in investment emissions by 2032/33 from 7,067 tCO_2e in the FBP to 19,525 tCO2e.

- The FBP forecast 150,634 tCO2e in 2026/27 and reduction to 143,597 tCO2e by 2032/33 – a reduction of 7,067 tCO2e or 4.7% from 2026/27.
- The DD forecasts an estimate of 131,108 tCO2e by 2032/33 in DD Table 25 with WCB excluded from investment - a reduction of 19,525 tCO2e or 13% from 2026/27.
- The DD also forecasts a reduction of 131,503 tCO2e by 2032/33 with WCB included in investment - a reduction of 19,131 tCO2e or 12.7% from 2026/27.

The DD applied three factors to increase the reduction of 7,067 tCO2e assumed between the years of 2026/27 and 2032/33 in the FBP as follows:

1. By multiplying it by a factor of 1.279, as the ratio of 6.0% to 4.7% where 6.0% is the assumed average movement of investment emissions in England & Wales and 4.7% is the assumed value in Scotland.
2. By multiplying it by a factor of 1.666 as the ratio of 10% (i.e. 6% + 4%) to 6%, where the 6% is the same 6% as point 1. and the 4% is the ratio of additional efficiency (“productivity”) gains assumed in DD Table 46 of £315m divided by the FBP investment programme of £8,093m (rounded to the nearest whole percentage point).
3. By multiplying it by a factor of 1.279 (as the ratio of 6.0% to 4.7% where 6.0% is the assumed average movement of investment emissions in England & Wales and 4.7% is the assumed value in Scotland).

When these three factors of 1.279, 1.666 and 1.279 are applied to 7.067 tCO2e they form a 19,260 tCO2 reduction, which is a reduction of 12.8% on the FBP’s forecast value of 143,597 tCO2e in 2032/33. This is close to the estimate of 12.7% that is reported in the DD.

We note that on points 3. to 1. above:

3. is a direct second application of the same factor as point 1 and as such is unreliable and unreasonable.
2. is a price effect that has no effect on the outputs and volume of materials and hence no impact on carbon emissions (i.e. factor of 1). Furthermore, the additional expenditure in Table 1 does have an effect of increasing outputs and should lead the 1.666 factor being replaced by a factors of expenditure impact of £168m with a factor of 0.979.

1. is based on reference to “bespoke performance commitments” of four water companies in England & Wales rather than their whole investment plan, and as such should be expected to be above the average of a whole investment plan programme through a potential imbalance in the evidence base towards higher bespoke parts of their respective programmes, and as such it would be unreliable to apply any other factor than 1 from this data. Furthermore, there is only one company, South West Water, with an application across their whole programme with a 5% intensity reduction compared to the more ambitious Scottish Water’s FBP intensity reduction of 22%.

On these three accounts we found that the evidence currently available does not support adjustment of the FBP’s forecast value of 143,597 tCO2e in 2032/33.

Appendix E: Further details of Drinking Water Quality Risks

1.22 Drinking Water Quality Risks Across All Systems Above Long-Term Tolerable Threshold.

Background

Under The Public Water Supplies (Scotland) Regulations 2014 (amended), as well as ensuring the supply of wholesome drinking water which meets prescribed regulatory standards, Scottish Water is required to identify and address significant risks of supplying unwholesome water. To monitor progress in managing long-term risk and therefore reduce the number of significant risks, Scottish Water's Draft and Final Business Plans set out proposals for outcome measure 1.22 Drinking Water Quality Risks Across All Systems Above the Long-Term Tolerable Threshold.

The development of the outcome measure coincided with the changes to Scottish Water's risk assessment processes required for identifying significant risks (and those above the long-term tolerable threshold), in response to an audit by DWQR. The outcome metrics provided in the final business plan represented the risk assessment methodologies in use at the time. However, as the methodologies were, and continue to be, updated it was recognised that the base position and outcome profile for SR27 would likely change. Due to this ongoing work, it is proposed that implementation of the outcome measure is postponed, to allow Scottish Water to complete activities required by the revised DWQR Enforcement Notice (EN) by April 2028, and a period of time allowed thereafter for implementation.

Through tripartite discussions between Scottish Water, WICS and DWQR, WICS requested that should the measure be postponed as suggested, that an interim method be agreed for assessing Scottish Water's progress in relation to water quality risk management, to be ratified by DWQR.

In addition, feedback from DWQR in response to both the draft and final business plans expressed a preference for an outcome measure to be based on Significant Risk, reflecting the regulatory significance, either in place of or in addition to the proposed outcome of Risks Above the Long-Term Tolerable Threshold.

Proposal Outcomes & Implementation

In response to DWQR feedback, it is proposed that a new line is added to Table 1 to reflect a new outcome measure of Number of Drinking Water Quality Significant Risks.

To support the reduction in Significant Risks over the longer term, Scottish Water proposes that outcome 1.22 is retained but its title simplified to Number of Drinking Water Quality Risks Above the Long-Term Tolerable Threshold.

The Table 1 commentary will be updated to reflect both outcomes and to specify that risk assessments will apply to all of Scottish Water's drinking water systems.

For the reasons set out above, it is proposed that implementation of both measures will be postponed until April 2029 to allow the risk assessment methodologies and supporting processes to be fully developed, tested and implemented, which will provide a greater level of confidence in the initial baseline and subsequent reporting of progress during the period.

Interim Approach

To assess Scottish Water's progress in relation to water quality risk management from 2027 to 2029, it is proposed that this is based on the revised Risk Assessment Enforcement Notice referred to above, and progress in relation to the management of risks through the Significant Risk reporting process. This will provide a robust and credible assessment of Scottish Water's performance in this area.

Assessment to be based on:

- Quarterly EN progress reports submitted within agreed timescales.
- Progress and completion of EN requirements within agreed timescales.
- Quarterly Significant Risk Report submitted within agreed timescales (ongoing activity post-completion of EN activities).
- Development of action plans to mitigate Significant Risks within agreed timescales (ongoing activity post-completion of EN activities)

It is envisaged that Scottish Water's performance against the above criteria will be reported by Scottish Water through the annual reporting process agreed for the Table 1 outcomes and endorsed or confirmed by DWQR to WICS. This interim approach will commence for the 2027-28 reporting year and end after the 2028-29 year, at which time the outcomes proposed above will take effect.

Annex 4
Capital Investment

1 Summary

1.1 This annex provides additional information relating to Capital Investment. The table below summarises the relevant areas and indicates where the corresponding response can be found.

Table 1: Response Summary

WICS Ref	In relation to	Response location
5.12.1	Addressing the discrepancy between the number of maintenance interventions proposed in the asset class policies, known as Management Approaches, and the business plan data tables	Annex 4c – AR3 Outputs
5.12.1	Provide forecasts of the number of inspections and responsive maintenance interventions	Annex 4c – AR3 Outputs
5.12.1	Consolidating the list of actions from its various asset management improvement plans	Annex 4d - Asset Management Improvement Plan
5.12.1	Confirmation of the project needs and scope for the investment at Carron Valley and Glendevon water treatment works	Annex 4a - Capital Investment
5.12.1	Confirmation of the project outputs for the investment for resilience and growth in Edinburgh, Lothians, Castle Moffat, and Hopes, for strategic replacement at Daer water treatment works, and for increasing wastewater treatment capacity in Seafield, Nigg and Persley	Annex 4a - Capital Investment
5.12.1	Further information on how unit costs for the programme for maintaining inlet works have been derived	Annex 4b - Cost Challenge
5.12.1	Provide an update on Scottish Water's engagement with SEPA on the pass forward flow (PFF) compliance programme	Annex 4a - Capital Investment
5.12.1	Confirmation of missing project outputs for investment areas identified in Appendix 1 of the Draft Determination (sections 1.3 and 1.4; including but not limited to: outputs for chlorine contact tank management programme, for MA003 Maintain Pipebridges, for MA068 Statutory, Essential and Planned Maintenance)	Annex 4c – AR3 Outputs

1.2 There are a small number of areas which were covered in WICS Draft Determination Section 5 (Capital Investment) but have not been included this annex. The table below confirms in which annex these have been addressed:

Table 2: Additional Response Summary

WICS Ref	In relation to	Response Location
5.12.1	Confirmation that the West Central Bioresources project roles, responsibilities, and delegated authorities are clearly identified, agreed, and documented, with roles set out in the investment case	Annex 6 - West Central Bioresources
5.12.1	Providing a more in-depth assessment of how the West Central Bioresources project will integrate with existing policies and plans at the national, regional and local level	Annex 6 - West Central Bioresources
5.12.1	Providing its internal capacity and supply chain readiness assessment	Annex 7 – Board Assurance
5.12.1	A further assurance statement from Scottish Water's Board that it has both the internal capacity and supply chain capacity to deliver the level of investment proposed in the Draft Determination	Annex 7 – Board Assurance

Annex 4a
Capital Investment Evidence

Contents

1 Introduction 3
2 Further Evidence on Capital Investment Requirements 4
3 Additional Information for Specific Projects & Programmes 13
3.1 Juniper House (5.5.66) 13
3.2 Pass Forward Flow (5.12.1) 13

1 Introduction

1.1 WICS approach for SR27 places even greater emphasis on evidence-based decision making, as such, they have focused on the quality of Scottish Water's evidence and analysis underpinning how it plans to meet Scottish Ministers' Objectives in the context of the longer-term water sector vision.

1.2 This annex focuses on providing additional evidence to support the information provided in the business plan position.

2 Further Evidence on Capital Investment Requirements

2.1 WICS had some questions regarding the data and evidence underpinning some capital investment decisions and therefore requested additional evidence to support some projects that form part of the Investment Programme.

2.2 Table 1 sets out the projects WICS identified in section 5.12.1 of the Draft Determination, requesting further information (Table 2) to:

- Confirm the need being addressed; or,
- The output being delivered within SR27.

Table 1: Summary of Projects

Related Asset	
Carron Valley WTW	
Glendevon WTW	
Edinburgh, Lothians, Castle Moffat and Hopes	
Daer WTW	
Seafield WWTW – AVSE	
Nigg WWTW	**Aberdeen Strategy**
Persley WWTW	

Table 2 - Summary of Projects Requiring Additional Evidence to retain need in Final Determination

Related Asset	WICS requirement	Additional Supporting Evidence
Carron Valley WTW	Confirm Carron Valley WTW project needs and whether solution relates to taste/odour only or includes HAAs Confirm Carron Valley investment is consistent with low-regrets pathway if HAA solution later required	The primary purpose of the proposed investment of £19m in the 2027-33 regulatory period (rather than the 2021-27 period quoted) is to deliver further mitigation to address the significant risk of taste and odour at Carron Valley WTW. However, the proposed solution of ozone treatment is also expected to increase removal of organic material, further reducing the risks of disinfection by-products, discolouration and microbiology. This follows investment in the 2021-27 period to deliver initial mitigation to these risks through improvements to clarification, filtration, chemical dosing and additional capacity to dose powdered activated carbon (PAC). Despite the additional capability provided by the SR21 investments, increasing levels of taste and odour forming compounds of geosmin and methyl-isoborneol (MIB) in the raw water at Carron Valley cannot be fully addressed by PAC alone resulting in residual levels entering supply. These levels are sufficient to be detected by customers and in 2024 resulted in a DWQR-declared incident. Additional treatment in the form of ozone dosing is therefore required to minimise levels of these compounds so they are no longer detectable by customers. The evidence provided as part of the Final Business Plan submission was intended to provide the background to the taste and odour risk (as part of the overall list of needs originally agreed with DWQR), setting out the basis for a phased approach to firstly secure compliance through an initial phase of measures (being delivered in 2021-27). This recognised that further investment would be required to deliver the lowest risk position in the future (after SR27), which was based on the installation of ozone and new GAC filters. However, increasing levels of geosmin and MIB beyond those originally expected have brought forward the timing of the additional measures into SR27. Pilot trials undertaken with ozone, GAC and PAC have demonstrated that the required reduction in geosmin and MIB can be achieved using ozone in conjunction with the recently upgraded PAC system, thereby negating the need for additional investment in GAC filters, aligned with a low regrets pathway. Specifically in relation to HAA, following delivery of the measures in 2021-27 and the additional benefits from the ozone dosing to be delivered during the 2027-33 period, no further investment is proposed.
Glendevon WTW	Confirm the project needs and scope for investment at Glendevon water treatment works and that full scope will be met from proposed costs	The primary investment needs for Glendevon WTW, as originally agreed with DWQR, were microbiology, disinfection by-products and discolouration with asset capability issues identified in relation to coagulation, filtration and disinfection processes along with asset condition risks. Ongoing review of the risks and needs (under the Significant Risk Policy) at Glendevon have confirmed the microbiology risk as being significant due to the aforementioned asset capability deficiencies, and the risk of disinfection by-products is assessed as being above the long-term tolerable threshold. As highlighted in the response to the WICS Final Business Plan query 03-09, the risks primarily stem from high and variable microbiological and solids loading from the raw water, poor chemical dosing

Related Asset	WICS requirement	Additional Supporting Evidence
		control, poor treatment and control of the washwater and supernatant return, and filter loading rates exceeding specification. This leads to poor cell count removal and variable filtered water quality which means the water is not being sufficiently prepared for disinfection in line with regulatory requirements, and high total organic carbon levels in the treated water, together with poor disinfection control, increasing the potential for disinfection by-product formation. The scope to be delivered by the proposed investment of £53m includes ceramic membranes filtration (inc. backwash and chemical clean); diversion of backwash waste and raw water strainer to dirty backwash tank; attenuation, neutralisation and discharge of waste; new Clear Water Tank; provision of Auto Shutdown and Run-to-Waste. The replacement of the current rapid gravity filters with ceramic membranes is expected to deliver performance improvements which, along with the other measures, will address the primary risks and needs. However, should further organics removal be required in the future to achieve long-term disinfection by-product minimisation objectives, this will be addressed through the provision of ion-exchange potentially in SR33 (not included in the £54m). However, it is not expected that this will be required to achieve the level of risk mitigation required at this stage. Note these costs are at G50, and will continue to develop throughout the lifecycle of the project. In addition to the main investment set out above, a separate package of initial measures, including chemical dosing improvements with an estimated cost of approximately £3.4m, was originally planned for delivery during the 2021-27 period. These SR21 measures have subsequently been deferred through the latest investment prioritisation process and incorporated into the overall package of work being considered by Scottish Water's DV4 Enterprise delivery partners.
Edinburgh, Lothians, Castle Moffat and Hopes	Confirm project outputs for resilience and growth in Edinburgh, Lothians, Castle Moffat and Hopes	In addition to the response to WICS Final Business Plan query 05-08 (see appendix), the Edinburgh, Lothians, Castle Moffat & Hopes project is one of a number of investment needs to address supply-demand balance deficits over the next 25 years, potentially totalling ~£1bn. It is envisaged that many of these will require phased investment, spanning a number of periods, through an adaptive planning approach in response to the effects of climate and demographic change. The needs originally prioritised for investment in the 2027-33 period (in addition to proposed investment for the Dundee area) are shown in the table below, along with the anticipated investment required to deliver the initial phase of interventions totalling £60m. However, funding proposals subsequently presented in the Final Business Plan were based on a combined value of £25m as a result of prioritisation within the overall funding envelope. To maintain focus on the initial priority needs, all needs were retained in the Final Business Plan to allow strategies and / or solutions to be developed as a minimum, with delivery potentially commencing for some of these within the period.

Related Asset	WICS requirement	Additional Supporting Evidence

Need	Investment	SRC27 FBP 2024/25 Post-Eff £m	Original pre-DBP Proposal £m
3281	South Uist WRZ Growth and Resilience	£0.844	£2.006
3281	Burnside TWP HV-VSD upgrades (Daer)	£0.532	£1.264
3281	Edinburgh Lothians Castle Moffat Hopes - Resilience and Growth	£6.875	£16.337
3281	Fife	£4.718	£11.208
3281	Howdenwells & Manse Street	£3.855	£9.156
3281	Turriff & Badentinan & Glenlatterach	£8.643	£20.540
	Totals:	£25.467	£60.511

Reflecting an ongoing review of risks and investment priorities, the table below presents an updated view of the potential investment and proposed outputs for each of the original needs.

Investment Need (WRZ)	Original DBP £m	FBP £m	Updated SR27 Proposal		Proposed Activity
			Activity £m	Total £m	
Total Allocation Proposal	£60.511	£25.467	£25.467	£25.467	
South Uist	£2.006	£0.844	£0.200	£0.200	Develop appraisal to Stage 3a- assume 10% of total scheme cost (Stage 2 PIA)
Daer & Camps (Burnside)	£1.264	£0.532	£1.264	£1.264	Deliver proposed solution of Variable Speed Drive pumps.
Edinburgh & Lothians Castle Moffat & Hopes	£16.337	£6.875	£3.267	£4.901	Develop appraisal to Stage 3a for long-term approach - assume 20% of long-term solutions (Stage 1)
			£1.634		Develop interim drought deployment plan - assume 10% of long-term solution
Fife	£11.208	£4.718	£2.242	£3.363	Develop appraisal to Stage 3a for long-term approach - assume 20% of total scheme cost

<table>
<tr><th>Related Asset</th><th>WICS requirement</th><th>Additional Supporting Evidence</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><td></td><td></td><td></td><td>£1.121</td><td></td><td>Develop interim drought deployment plan - assume 10% total scheme cost.</td></tr>
<tr><td>Howdenwells & Manse Street</td><td>£9.156</td><td>£3.855</td><td>£4.000</td><td>£4.000</td><td>Deliver proposed borehole solution</td></tr>
<tr><td rowspan="2">Turriff-Badentinan-Glenlatterach</td><td rowspan="2">£20.540</td><td rowspan="2">£8.643</td><td>£4.108</td><td rowspan="2">£11.739</td><td>Develop appraisal to Stage 3a for long-term approach - assume 20% of total scheme cost</td></tr>
<tr><td>£7.631</td><td>Commence delivery of initial phase.</td></tr>
<tr><td>Total (Check)</td><td>£60.511</td><td>£25.467</td><td>£25.467</td><td>£25.467</td><td></td></tr>
<tr><td>Variance</td><td>£0.000</td><td>£0.000</td><td>£0.000</td><td>£0.000</td><td></td></tr>
</table>

The revised activities and associated investment (still within the Final Business Plan allocation) set out above will deliver a combination of system and / or project investment appraisals for the majority of the needs, leading to initial investment delivery commencing for the Howdenwells and Turriff WRZs, with Fife and Edinburgh / Castle Moffat ready to progress early in SR33. It is proposed that the solution already identified for Daer will also be delivered within the period. Together, these activities will benefit customers by identifying (and in some cases delivering) the measures required to address current and forecast supply-demand balance deficits and protect supplies from the impacts of climate and demographic change.

Note: Costs shown in table above are derived from high level strategic modelling rather than detailed options development and therefore subject to variation as projects are developed.
</td></tr>
<tr><td>Daer WTW</td><td>Confirmation of the project outputs for the investment for strategic replacement at Daer water treatment works</td><td>During the 2021-27 period, a project investment appraisal (PIA) to address priority needs at Daer WTW was completed under a Letter of Commitment to DWQR in response to a discolouration incident in 2021. Due to the extent and complexity of work required to address the priority needs (including discolouration, disinfection-by products, auto-shutdown / run-to-waste / resilience) on the existing WTW, the best whole-life cost option was identified as interim measures followed by the strategic replacement of the WTW before 2040. This also provides the opportunity to consider a strategic solution for the area, potentially incorporating the adjacent Camps system whilst identifying potential alternative raw sources. Recognising the scale of such an investment, it was proposed that the initial system appraisal, project investment appraisal and detailed design would take a number of years to complete (envisaged within</td></tr>
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Related Asset	WICS requirement	Additional Supporting Evidence
		the 2027-33 period) to allow delivery to take place and realise benefits to customers during the 2033-39 period. The outputs of the £31m proposed in the Final Business Plan for the detailed development of the replacement WTW would therefore be: • System analysis and appraisal to capture current and longer-term risks and initial identification of strategic opportunities. • Stage 1 to Stage 3a project investment appraisal to develop and appraise options; leading to confirmation of preferred option. • Stage 3a to 3b outline design and feasibility testing of preferred option. • Stage 3b to Stage 4 detailed design of confirmed preferred option, incorporating key land, planning, power, environmental, stakeholder and other key enabling activities. • Contractor readiness for site mobilisation at the start of the 2033-39 period. It should also be noted that with a new WTW unlikely to be completed until the latter part of the 2033-39 period, that additional interim measures and ongoing asset maintenance will be required until then to mitigate risks at an appropriate level, with only the latter currently reflected within the FINAL BUSINESS PLAN proposals. Further information regarding costs are in Annex 4b – Cost Challenges.
Seafield WWTW – AVSE	Confirmation of the project outputs for the investment for increasing wastewater treatment capacity in Seafield Confirm deliverables for AVSE Growth Seafield project over 2027-33 period	The need for investment at Seafield WWTW remains fully justified and is driven by forecast wastewater growth within the Edinburgh area together with the requirement to establish the long-term asset strategy following the return of the PFI-operated site in 2029. The Edinburgh Growth Strategy has identified a future requirement to increase treatment and conveyance capacity to maintain service levels and support planned growth across the catchment. The SR27 funding request is not for delivery of new treatment capacity itself. Rather, it funds the structured development of the future investment programme to a level of maturity that enables efficient delivery in SR33. The outputs from the SR27 investment will therefore include: • Updated growth, flow and load forecasting following refresh of the Edinburgh Growth Strategy. • System and site-wide options appraisal to determine the preferred long-term capacity solution. • Assessment of associated compliance, asset condition, refurbishment, odour and climate resilience requirements.

Related Asset	WICS requirement	Additional Supporting Evidence
		• Development of the preferred solution through project appraisal and outline design stages. • Identification of the scope, sequencing, costs and delivery strategy required for implementation in SR33. This work will provide a fully evidenced and costed investment proposition capable of delivering the primary output of increased Part 4 wastewater treatment capacity while ensuring that wider regulatory, operational and resilience obligations are incorporated into the preferred solution. Scottish Water therefore considers the proposed SR27 funding essential to de-risk a major strategic investment and to ensure delivery readiness for the subsequent regulatory period.
Nigg WWTW (read with Persley WWTW)	Confirmation of the project outputs for the investment for Nigg	The requirement for investment at Nigg WWTW is supported by the Aberdeen Strategy completed during SR21, which identified the need for additional wastewater treatment capacity to accommodate forecast growth within the Aberdeen catchment during the early 2030s. The proposed investment therefore addresses a clearly evidenced future capacity constraint arising from regional growth forecasts. The purpose of the SR27 allocation is to progress the scheme from strategic need through to a delivery-ready investment proposal. The primary outcome remains the provision of increased Part 4 capacity to accommodate future wastewater growth. The outputs to be delivered during SR27 are: • Confirmation of future growth requirements using updated Aberdeen and Aberdeenshire Local Development Plans. • Hydraulic, process and catchment assessments to define future capacity requirements. • Evaluation of opportunities to address growth, compliance, asset replacement and climate resilience requirements through a coordinated investment strategy. • Completion of project appraisal, option selection and development of the preferred solution. • Consideration and deployment of any interim measures to support compliance. • Production of outline and detailed design information sufficient to support implementation during SR33.

Related Asset	WICS requirement	Additional Supporting Evidence
		This approach ensures that future capital investment is based on robust evidence and optimised whole-life value while maintaining the ability to deliver growth requirements within the required timescales. Scottish Water therefore considers the proposed funding necessary and proportionate to produce a fully developed and deliverable capacity enhancement programme.
Persley WWTW (read with Nigg WWTW)	Confirmation of the project outputs for the investment for Persley	The requirement for investment at Persley WWTW is similarly founded on the conclusions of the Aberdeen Strategy undertaken during SR21, which identified the need for additional wastewater treatment capacity to support forecast growth within the Aberdeen and Aberdeenshire area during the early 2030s. The SR27 funding request is intended to deliver the development activities necessary to define and prepare the preferred investment solution rather than construct new treatment capacity during the period itself. The primary strategic outcome remains the future increase in Part 4 capacity required to accommodate planned growth. The outputs of the SR27 investment will include: • Validation of future demand and growth assumptions against updated development plans. • Completion of system, process and asset assessments to establish future capacity requirements. • Assessment of opportunities to address wastewater compliance, asset condition, refurbishment and climate adaptation requirements alongside growth needs. • Development and appraisal of alternative investment solutions and selection of a preferred option. • Consideration and deployment of any interim measures to support compliance. • Progression of the preferred scheme through project appraisal and design stages to establish scope, cost certainty and delivery readiness for implementation in SR33. These outputs will provide Scottish Water and WICS with a robust and evidence-based investment proposition, ensuring that future capital expenditure is targeted at the most effective solution and that delivery risk is minimised before the commencement of major construction activity. Revised funding of **£28M** for the development and / or delivery of aspects of the broader Aberdeen Strategy, consisting of – • System Plan studies and development **£2M**

Related Asset	WICS requirement	Additional Supporting Evidence
		• Option development to G70 following outcomes of System Planning **£15M** (10% of assumed £150M build) • No Regrets / Interim Upgrades – Persley Primary Tanks **£9M,** Resolve Nigg power constraints **£2M** This represents a £10m reduction in the combined allocation (£38m) for these needs.

2.3 We hope this additional information provides clarification to WICS, however if further information is needed, we would welcome further discussion with WICS and other relevant regulators.

3 Additional Information for Specific Projects & Programmes

3.1 Juniper House (5.5.66)

3.1.1 The estimated cost for the Juniper House project was benchmarked by independent third party Cost Consultants Gleeds utilising historic data base price information and indices commensurate with the stage of design development (at Feb 25) from a range of sources such as the Building Cost Information Service (BCIS – initially founded by the Royal Institution of Chartered Surveyors but since 2022 an independent specialist body), Crown Commercial Services (CCS) Framework price details, Gleeds in-house cost data and estimated data from modular building supplier Merritt to arrive at a benchmark cost per square foot. The independent Cost Consultants concluded that the Scottish Water estimated cost for both traditional and modular construction were within the expected benchmark ranges on this basis.

3.1.2 The intention going forward is to update and finalise the scope and specification for inclusion in a formal tendered market approach from which accuracy of the benchmark and estimate will be established through this competitive process. These prices will then also be externally validated as part of the review process which is expected to be completed by summer 2027.

3.2 Pass Forward Flow (5.12.1)

3.2.1 Understanding WwTW Pass Forward Flow (PFF) performance is a new focus area in our Final Business Plan. Previous investment periods have focussed more on improving the sewerage network (UIDs) and in enhancing waste water treatment works (WwTW) to achieve tighter final effluent standards to meet objectives for Scottish Water within Scotland's River Basin Management Plan. Beyond reporting of WwTW flow and Overflow Events at a relatively small number of assets / locations in the annual Flow and Event Return, there has been little focus on understanding our PFF performance (i.e. whether flow is being passed forward at the permitted level before overflow events occur and for the duration of their occurrence)

3.2.2 Recognising the improved visibility of overflow events provided through our enhanced EDM (Event Duration Monitor) estate, the focus of OFWAT and the EA PFF investigations and prosecutions in England and Wales, and the ambition to introduce a broader measure of compliance within SEPA's Environmental Performance Assessment Scheme, a programme of enhanced PFF monitoring and the creation of an analytics platform to present PFF performance has been included within the Business Plan.

3.2.3 SEPA understands the scale of this proposed monitoring programme and that it will take time to undertake a gap analysis against current limited PFF monitoring capability, design new monitoring interventions to close the identified gap against WwTW PFF permit requirements and to then gather reliable data and create meaningful insights on performance and on compliance risk. Scottish Water has positioned that non-compliance at WwTW overflow locations due to incapability to meet PFF should be considered as UID (Unsatisfactory Intermittent Discharges) and would be added to the UID register and prioritised for action upon confirmation. SEPA has agreed with this position and that UIDs should be classified as 'Pending' until such time as it is determined whether permits can be adjusted to address non-compliance and 'Confirmed ' only when it is clear that enhancement is required.

3.2.4 The Business Plan does not include enhancement to address PFF non-compliance and limits SR27 action to addressing non-compliance through evidenced permit review. SEPA is therefore concerned that non-compliance will be identified, that this could represent a risk to the environment and that a lack of identified funding will delay improvement until SR33. SEPA, therefore, expects to be able to prioritise needs arising from PFF investigations against other UID projects and, potentially, other areas of proposed investment.

3.2.5 From a broader perspective, the scale of the SR27 UID programme has been proposed to meet our long-term ambition to address all UIDs before 2050. The UID register is currently being cleansed and the assumed starting point in SR27 suggested that around 150 UIDs would need to be delivered each investment period to achieve this long-term goal. SEPA has made it clear that they have concerns around some of the assumptions and that 150 UIDs should be considered only as a minimum and that, should the UID cleansing not reduce the UID Register or should the UID Register grow through the identification of new UIDs, SEPA may therefore have an expectation that the SR27 UID delivery target would increase consequentially. The DD contains additional investment (£168m) to be allocated across a range of outcomes. As part of the DD Response we have assumed an additional allocation of £33m relating to the removal of an additional 18 UIDs. These additional removals are fully dependent on the additional investment allocation being made available.

3.2.6 We consider that, should the scale of new 'PFF UIDs' confirmed through the deployment of new monitoring in SR27 be significant, consideration might need to be given and addressed through the IPPF process.

3.2.7 SEPA is broadly supportive of the need for new investment in PFF monitoring and they will be closely engaged in developing the deployment programme, identifying priorities, ensuring that maximum value is leveraged from existing

capability and seeking to gain the earliest possible view on performance and on potential non-compliance. Testing processes as early as possible, SEPA is currently looking to use data provided through the annual Flow and Event Return alongside information gathered through ongoing site inspections to categorise WwTW compliance using new definitions set out to support EPAS (Environmental Performance Assessment Scheme). This presents a real risk that an alternative view on WwTW compliance (from our traditional focus on only final effluent) becomes a matter of public record. We would be concerned about the suitability of existing equipment and data to accurately report PFF performance and we will look to target deployment of new monitors where SEPA inspection and assessment suggests that compliance issues might exist.

3.2.8 A SEPA / SW PFF working group has been set up to agree interim positions to support EPAS / inspection and, as we move into SR27, we anticipate that the remit of this group will be expanded to consider PFF monitor deployment and performance assessment.

Annex 4b
Cost Challenges

Contents

1 Introduction 3
2 MA004 Reservoir Safety 7
3 MA017 Wastewater Treatment Works - Inlet Works 12
4 MA029 Offices, Property & Estates 15
5 MA034 Customer Meters 20
6 MA041 Lead Management 27
7 MA043 Wastewater Treatment Works - Secondary & Tertiary Treatment 31
8 MA058 Water Pumping Stations 35
9 MA073 Metering & Flow Monitoring 41
10 MA077 We Enhance Scotland's Environment: Carbon Capture 44
11 MA108 – PFI Returns AR3 48
12 MA119 – Treated Water Storage (TWS) 49
13 MA119 Chlorine Contact Tanks 52
14 Daer Water Treatment Works Strategic Replacement 56
15 Allanfearn STC NH711475 - Replacement of Digester 1 & 2 60
16 Pathhead WwTW – Capital Maintenance 62
17 Infrastructure Investment 67
18 Service Relocation 68
19 Additional Review of Broader Aberdeen Strategy (inc. Persley and Nigg WwTW investment) 71

1 Introduction

1.1 This annex sets out the response to the targeted capital cost challenges applied by WICS in the Draft Determination. WICS identified £315m of reductions compared with the Final Business Plan, including £185m of targeted cost challenges across specific investment areas. A review has been conducted for each challenge in detail and accepts some reductions where evidence supports them, offers further reductions where updated scope or evidence has changed, but seeks reinstatement where the challenge is not sufficiently evidenced, is based on non-comparable benchmarking, or has been applied too broadly.

1.2 Across the targeted cost challenges, the key concerns are that WICS' analysis relies on unit rates derived from Final Business Plan tables that were not designed for benchmarking, applies benchmark-derived efficiencies across whole Management Approach allocations rather than the relevant components, and in some cases challenges scope rather than cost efficiency. Additionally, unit cost challenges to post-efficient allowances creates a double efficiency impact.

1.3 Of the £184.9m targeted capital cost challenge, this annex evidences the proposed reinstatement of £131m and accepts or offers reductions totalling £85.9m, resulting in a net reinstatement position of £99m. This annex provides detailed evidence addressing each specific capital cost challenge raised in the Draft Determination for the following areas:

Table 1: List of Capital Cost Challenge Areas

Cost Challenge Area	Management Approach	Challenge Area
1	MA004	Dams & Reservoirs (Measures in the Interest of Safety)
2	MA017	WWTW Inlet Works
3	MA029	Property & Estates
4	MA034	Customer Meters (Smart Metering)
5	MA041	Lead Communication Pipes
6	MA043	Secondary Treatment Processes
7	MA058	Water Pumping Stations
8	MA073	Leakage Management Equipment
9	MA077	Carbon Capture
10	MA108	PFI Capital
11	MA119	Treated Water Storage
12	MA119	Chlorine Contact Tanks
13		Daer WTW Project-Specific Challenge
14		Allanfearn Digester Project-Specific Challenge
15		Pathhead WwTW Project-Specific Challenge
16		Infrastructure Investment
17		Service Relocations

Cost Challenge Area	Management Approach	Challenge Area
18		Additional review of broader Aberdeen Strategy (Persley & Nigg WwTW)

1.4 In assessing the targeted unit costs concerns are grouped into four main categories:

Table 2: Four Categories of Cost Challenge

Item	Category
1	The basis on which cost adjustments have been applied is, in many instances, unclear to Scottish Water which has limited our ability to respond effectively. This is because the expert report upon which WICS has placed reliance (prepared by WSP) is not explicit about how the proposed cost reductions have been estimated in the context of the benchmarking analysis it has carried out
2	Misinterpretation of the unit rate derived from the Final Business Plan tables (which they were not designed to enable) resulting in inappropriate cost benchmarking comparisons
3	Inappropriate application of benchmark derived efficiencies across whole Management Approach allocations rather than relevant components of allocations
4	Scope challenge

1.5 Accepting the Draft Determination unit cost challenge results in an unrealistic cost challenge that would ultimately disadvantage customers by reducing the amount of outputs that can be delivered for the reduced allocation leading to the under-delivery of outcomes.

1.6 Table 3 summarises the conclusion of our analysis of each specific capital cost challenge raised in the Draft Determination.

Table 3: Summary of £185m Cost Challenges and conclusion of our analysis.

Challenge Area	WICS Stated Applied efficiency %	WICS Reduction (£m)	SW Restored Position (£m)	Funding reduction (£m)	Position Response
MA004 Dams & Reservoirs (MIOS)	5	-14	+14	0	Rejected. WICS challenges the composition of the MIOS dataset rather than demonstrating inefficiency. Applying a programme-wide efficiency adjustment based on exclusion of selected projects is not evidenced
MA017 WWTW Inlet Works	0	0	0	0	WICS requested further information on how the unit costs were developed which we have provided.
MA029 Property & Estates	20%	-13	+13	0	Rejected. WICS' benchmarking is not like-for-like and applies a challenge across the full Management Approach despite concerns relating principally to the offices and depots element.

Challenge Area	WICS Stated Applied efficiency %	WICS Reduction (£m)	SW Restored Position (£m)	Funding reduction (£m)	Position Response
MA034 Customer Meters (Smart Metering)	15%	-9	+9	0	Rejected. Scottish Water does not agree that the benchmark comparison is like-for-like and considers the challenge not reflective of the nature of this programme of work.
MA041 Lead Communication Pipes	7%	-3	+3	0	Rejected. The challenge is based on a unit rate comparison that includes non-comparable project scope, resulting in an overstated benchmark position.
MA043 Secondary Treatment Processes	10%	-11	+11	0	Rejected. Benchmark concerns relate to a small subset of cost models representing approximately 5% of programme costs. Applying efficiencies across the full Management Approach is disproportionate and unsupported
MA058 Water Pumping Stations	10%	-5	+5	0	Rejected. WICS has derived an average unit rate using Business Plan expenditure and a limited output count that does not reflect the full volume and range of interventions within MA058. The resulting comparison is not like-for-like and does not demonstrate inefficiency in Scottish Water's forecast costs. Full reinstatement of the £5m challenge is sought.
MA073 Leakage Management Equipment	10%	-4	+4	0	Rejected. The challenge is based on misinterpretation of intervention volumes and resulting unit rates. The apparent variance does not reflect the actual expenditure profile.
MA077 Carbon Capture	27%	-8	+8	0	Rejected. The challenge relies on high-level cost-per-hectare benchmarking which does not demonstrate comparable scope, delivery environment or programme requirements.
MA108 PFI Capital	0	0	0	-22	A review of PFI capital allocations has allowed a reduction in the investment projection (Daldowie AR3 -£17m and Ayrshire -£5m).
MA119 Treated Water Storage	10%	-29	+29	0	Rejected. WICS relies on benchmarking evidence that lacks sufficient transparency regarding comparator scope, normalisation and challenge derivation, preventing a robust like-for-like assessment.
MA119 Chlorine Contact Tanks	10%	-13	+13	0	Rejected. The challenge is based on assumptions regarding tank size and TWS-derived costs that are inconsistent with the underlying Scottish Water evidence and revised dataset analysis.
Daer WTW Project-Specific Challenge	Design fees	-13.4	+6	-7.4	Partially Accepted. Scottish Water recognises potential economies of scale but does not agree that a detailed-design benchmark should be applied to a broader Gate 90 development and maturation scope. A balanced reinstatement of £6m is proposed.
Allanfearn Digester Project-Specific Challenge	Scope	-19.5	0	-19.5	Accepted. Scottish Water agrees the allowance should be removed as the scope is already incorporated within the wider Allanfearn WwTW Treatment and Bioresources project, avoiding double counting.

Challenge Area	WICS Stated Applied efficiency %	WICS Reduction (£m)	SW Restored Position (£m)	Funding reduction (£m)	Position Response
Pathhead WwTW Project-Specific Challenge	Scope	-6	+6	0	Rejected. Scottish Water has provided the additional evidence requested, demonstrating the investment need and the maturity of the cost estimate. WICS' challenge therefore reflects a difference in the presentation of needs and options evidence, rather than any absence of investment need or weakness in the cost basis.
Infrastructure Investment		-27	0	-27	Accepted. This is not part of the primary charges model - further details on the proposed uplift in charges are available in Annex 2 – Specific Modelling and Funding Adjustments.
Service Relocations		-10	+10	0	Rejected. The SR27 allowance is a prudent and necessary provision to ensure Scottish Water can meet statutory diversionary obligations driven by Roads and Rail Authorities, with visible schemes alone potentially requiring £33m–£35m and further demand likely to emerge during the period.
Additional review of broader Aberdeen Strategy (inc Persley and Nigg WwTW)	Scope	0	0	-10	Review of the SR27 scope for Aberdeen Strategy resulting in reduced allocation
Total		**-184.9**	**+131.0**	**-85.9**	**Net reinstatement of £99m**

1.7 Further supporting evidence was developed in areas where no cost challenge was applied, specifically wastewater infrastructure and civils cost models, but where observations on benchmarking were made within Section 1.7 of the Draft Determination Appendices. This additional analysis has not been included within Scottish Water's response, as it does not alter the position set out in the Draft Determination. However, the evidence remains available and can be provided to WICS on request should further information be required to support the efficiency conclusions presented in the Final Business Plan.

1.8 The following sections set out the cost challenges for each of the areas.

2 MA004 Reservoir Safety

2.1 WICS Cost Challenge Value: -£14M

Table 4: WICS Cost Challenge – MA004 Reservoir Safety

MA005 Reservoir Safety	Values (m)
Scottish Water forecast expenditure (2024-25 prices)	£278
Cost challenge (2024-25 prices)	-£14
Draft Determination allowance (2024-25 prices)	£264

2.2 WICS Cost Challenge Principle

2.2.1 WICS has applied a 5% catch-up efficiency challenge to this investment area, based on the following points:

- "The £1.1 million unit cost for standard MIOS resolution is high compared to industry standards. This unit cost is based on historical rates for 157 MIOS interventions. Based on WSP's review, we consider that the historic rates of 20 of those interventions should be categorised as what Scottish Water refers to "big ticket" MIOS because they are over £2 million and average £6.3 million in total costs. Including these 20 interventions in the calculation of the standard MIOS unit rate would overestimate the unit rate – if they were excluded, the average value of a MIOS intervention would be £382,947, which more closely aligns with WSP's expectations".
- WSP advised "on a cost challenge of between 8% and 12% is applied, noting that it is difficult to determine whether the overall investment cost is sensitive to discrepancies in unit costs, as programme costs could vary significantly depending on site-specific constraints, reservoir size, type and required works".

2.3 Scottish Water Costing Evidence

2.3.1 The table below summarises the key unit costs underpinning the Management Approach:

Table 5: Costs Underpinning MA004

Assumed cost per intervention	Value (£)	Source
Annual supervising engineer inspection	2,500	Estimated cost of internal resource

Assumed cost per intervention	Value (£)	Source
Pre-statutory/Statutory inspection	12,000	Recently tendered inspection programme
Standard resolution to MIOS cost per reservoir (exc. Major spillway and drawdown projects)	1,100,000	Historical reservoir projects
Average spillway/drawdown project cost (MIOS big ticket)	10,000,000	Historical project costs
Proactive preventative maintenance (Non-MIOS maintenance)	200,000	Subject matter expert estimate
Basic annual maintenance cost	30,000	Bottom up estimate of activities and historical costs
Discount rate	3.5%	Scottish Water agreed rate

2.3.2 The MA004 forecast has been developed through Scottish Water's established investment planning and estimating processes. Its evidence base comprises current SR21 latest best estimates, internal resource estimates, recently tendered inspection programmes, bottom-up pricing, historical project costs and engineering judgement.

2.3.3 The £1.1m standard MIOS resolution unit rate is informed by the latest best estimates for 157 SR21 MIOS-related projects recorded in Scottish Water's variance report. The dataset captures the range and complexity of reservoir safety interventions, including major spillway upgrades, drawdown improvements, pipework remedials, discontinuances and other statutory remedial works.

2.3.4 WSP's challenge concerns the composition of this historical dataset rather than the efficiency of the underlying expenditure. WSP proposes excluding the 20 projects valued above £2m; doing so would leave 137 projects and reduce the average latest best estimate to £382,947. This lower figure aligns more closely with WSP's expectations, but it does not demonstrate that the excluded projects were inefficient or unrepresentative of future statutory requirements

2.4 Scottish Water Cost Challenge Response

2.4.1 Scottish Water has reviewed the challenge against the evidence submitted in the Management Approach and WSP's findings in the WICS Engineering Review of the SR27 Business Plan.

2.4.2 Scottish Water's response to each element of the cost challenge is set out below:

Table 6: Scottish Water's Response

WICS Cost Challenge	Scottish Water Response
1. The £1.1m unit cost for standard MIOS resolution is high compared to industry standards. WSP considers that 20 historic projects with costs greater than £2m should be excluded from the dataset, reducing the average MIOS intervention cost to c.£383k.	Scottish Water does not agree that excluding the 20 higher-value projects produces a more representative forecast of future reservoir safety investment. The £1.1m unit rate is derived from 157 SR21 MIOS-related projects and reflects a substantial evidence base of actual interventions across the asset base. These projects comprise genuine inspection-led requirements, including spillway upgrades, drawdown improvements, pipework remedials, discontinuances and other statutory safety works. They are neither abnormal nor discretionary and remain representative of the intervention range expected in future programmes. The challenge therefore reflects a difference in judgement over dataset composition, not evidence that the underlying costs are inefficient.
2. Including higher-value projects may overestimate future MIOS investment requirements.	This assumption is not supported by the historical evidence or by the inspection-led nature of reservoir safety investment. Future requirements will continue to be determined by statutory inspection findings, reservoir-specific conditions, spillway capacity assessments, drawdown requirements, ARPE-driven interventions and evolving dam safety obligations. The higher-value projects challenged by WICS are genuine outcomes of that process and remain foreseeable. Excluding them assumes that comparable complex interventions will not recur, contrary to Scottish Water's historical and operational evidence.
3. WSP advised that a challenge of between 8% and 12% may be appropriate.	WSP also acknowledges that it is difficult to determine whether the overall programme cost is sensitive to discrepancies in unit rates because expenditure varies materially with site constraints, reservoir size, asset type and the works required. This qualification confirms that a difference in an average unit rate cannot be translated reliably into a quantified overstatement of programme expenditure. It therefore does not provide a robust basis for a blanket efficiency challenge.

WICS Cost Challenge	Scottish Water Response
4. Application of a 5% catch-up efficiency challenge across the Reservoir Safety programme.	The Reservoir Safety programme has been developed through Scottish Water's established planning and estimating processes and is supported by SR21 latest best estimates, recently tendered inspection programmes, historical project costs, internal resource estimates, bottom-up pricing and engineering judgement. WICS has not identified or quantified inefficiency in these processes or in the wider programme. Its challenge rests on a preference to exclude selected historical projects from the evidence base. That is not sufficient evidence to justify a programme-wide efficiency adjustment.

2.4 Scottish Water Proposed Reinstatement Value for the Final Determination: +£14m

2.4.1 Scottish Water requests full reinstatement of the £14m Reservoir Safety cost challenge in the Final Determination.

2.4.2 The 5% challenge is founded on WICS' preference to exclude a subset of higher-value historical MIOS interventions from the dataset used to derive the standard MIOS unit rate. WICS has not demonstrated that those projects were inefficient, abnormal or unrepresentative, nor has it evidenced that comparable interventions will not recur. The challenged projects represent genuine statutory and safety-critical requirements within the expected range of future reservoir interventions.

2.4.3 The MA004 forecast has been developed through Scottish Water's established planning and estimating processes and is supported by 157 historical MIOS projects, SR21 latest best estimates, recently tendered inspection programmes, historical project costs, internal resource estimates and engineering judgement. It appropriately reflects the inspection-led nature of reservoir safety investment, for which requirements and costs are determined by asset-specific conditions, statutory findings and dam safety obligations.

2.4.4 WSP acknowledges that the sensitivity of total programme expenditure to any discrepancy in unit rates is difficult to determine because reservoir size, configuration, condition and intervention requirements vary significantly. No quantified link has therefore been established between the disputed average unit rate and an overstatement of the overall programme allowance.

2.4.5 The challenge identifies no underlying inefficiency in Scottish Water's reservoir safety programme. It reflects only an alternative judgement on the treatment of selected historical evidence. That judgement is insufficient to support a programme-level reduction.

2.4.6 Accordingly, the £14m challenge is unsupported by demonstrated inefficiency, disproportionate to the evidence cited and inconsistent with the statutory, inspection-led nature of reservoir safety investment. It should be removed in full and the £14m reinstated in the Final Determination.

3 MA017 Wastewater Treatment Works - Inlet Works

3.1 WICS Cost Challenge Value: £0M

Table 7: WICS Cost Challenge – MA017 – Wastewater Treatment Works – Inlet Works

MA017 Wastewater Treatment Works - Inlet Works	Values (m)
Scottish Water forecast expenditure (2024-25 prices)	£131
Cost challenge (2024-25 prices)	£0
Draft Determination allowance (2024-25 prices)	£131

3.2 WICS Cost Challenge Principle

3.2.1 WICS is not proposing a catch-up efficiency challenge to this investment area, but has requested additional information in Scottish Water's response to the Draft Determination on the following points:

3.2.2 A further detailed explanation for how the unit costs for the maintaining inlet works programme have been derived, including how average asset and equipment costs were calculated, the data sources used, and the key factors influencing these estimates; and

3.2.3 An update on Scottish Water's engagement with SEPA on whether the proposed solution in the PFF compliance programme will meet the required need.

3.3 Scottish Water Costing Evidence

3.3.1 The table below summarises the costing approach underpinning the Management Approach:

Table 8: Costing Approach - MA017

Costing evidence	Value	Commentary
Costing methodology	ASM / SIM asset deterioration models	Average unit costs for repair, refurbishment and replacement were derived from Scottish Water asset deterioration models.
Data source	Annual Return 2024 (AR24)	Modelled costs use the latest available AR24 asset data underpinning the MA017 assessment.
Cost model release	R2309	Costs were priced using the current cost model release with appropriate indexation applied.
Assurance basis	Scottish Water assured costing process	Risk, on-costs and indexation were applied through established Scottish Water costing processes.
Scope of preferred option	All MA017 assets	Representative assets were used to inform policy option appraisal, while the preferred option includes the wider MA017 asset base.

3.3.2 The tables below summarise the key unit costs underpinning the Management Approach:

Table 9: Key cost assessment assumptions - for each asset class from SIM

Asset	Unit cost of opex fix (repair)	Unit cost of capex fix (repair)	Unit cost of refurbishment	Unit cost of replacement
Screens - powered (SIM)	£613	£14,817	£88,904	£148,174
Compactors (SIM)	£712	£9,515	£57,088	£95,147
Mixers (SIM)	£769	£8,279	£49,673	£82,879

Table 10: Average civil replacement and refurbishment costs used in ASM model

Asset type	Average cost to repair	Average cost to refurbish
GRPX - Grit Removal Plant	£59,243	£3,703
IWAX - STW Inlet Works	£110,047	£6,878
MACR - Inline Communitor Maceration	£79	£5
RBDX - Reed Bed (storm)	£116,589	£8,744
SCHD - Screenings Handling	£11,875	£699
SCRX - Screening	£98	£6
SWTX - Storm Water Tank, General	£1,305,336	£73,588

3.3.3 The MA017 unit costings have been derived from Scottish Water's asset deterioration models (SIM / ASM) based on AR24 and priced using current cost model release R2309, with indexation applied through Scottish Water's assured costing processes.

3.3.4 Average unit costs for replacement, refurbishment and repair for representative assets were derived from the asset deterioration models, with risk, on-costs and indexation applied. These representative assets provided an appropriate average-cost basis for policy option appraisal. Investment costs and outputs for the preferred policy option include all MA017 assets, not only the representative assets used in the costing assessment.

3.4 Scottish Water Response

3.4.1 Scottish Water has reviewed the information request against the evidence provided in the Management Approach and the findings set out in WSP's engineering review of the SR27 Business Plan

3.4.2 Scottish Water's response to each element of the information request is set out below:

Table 11: Scottish Water's Response

WICS Cost Challenge	Scottish Water Response
1. WICS has requested further explanation of how unit costs for maintaining inlet works have been derived.	Scottish Water has provided the costing basis for MA017. Unit costs are derived from ASM and SIM asset deterioration models using AR24 asset data and cost model release R2309. Risk, on-costs and indexation have been applied through Scottish Water's assured costing processes.
2. WICS has requested detail on the average asset and equipment costs, data sources used and the key factors influencing the estimates.	The evidence confirms that average costs were developed from representative asset types to support the policy option appraisal. The underlying cost variation reflects asset class, size, capacity, service and intervention type, including repair, refurbishment and replacement. The preferred option includes the wider MA017 asset base rather than being limited to the representative assets shown in the costing evidence.
3. WICS has requested an update on engagement with SEPA on whether the proposed PFF compliance solution will meet the required need.	This point relates to the technical and environmental acceptability of the PFF compliance solution rather than to a cost efficiency challenge. It should therefore be addressed through the relevant Management Approach technical response. It does not provide evidence of excessive or inefficient MA017 expenditure.

3.4.3 Scottish Water does not consider that the information requested by WICS supports any reduction to the MA017 allowance. No catch-up efficiency challenge has been proposed. The evidence confirms that the MA017 cost base has been developed from Scottish Water's established asset deterioration models, current cost model release R2309 and assured costing processes. The key cost drivers are asset type, asset size, service, actuation and required intervention type. These are appropriate determinants of inlet works costs and explain the variation in unit costs across the asset base.

3.5 Scottish Water Proposed Reinstatement Value for Final Determination: No Change

3.5.1 As no capex efficiency challenge has been applied to MA017, no adjustment to the £131.02m SR27 Business Plan value is considered appropriate. The evidence provided confirms that unit costs are derived from ASM and SIM model outputs, using current cost model release R2309 and Scottish Water's assured costing processes. WICS has requested further information but has not identified or quantified an underlying cost inefficiency. The appropriate final determination position is therefore no change to the MA017 allowance.

Notes: ASM = Asset Stewardship Modeller; SIM = Strategic Intervention Modeller. Forecast expenditure based on the Management Approach pre-efficient value referenced in the source document.

4 MA029 Offices, Property & Estates

4.1 WICS Cost Challenge Value: -£13M

Table 12: WICS Cost Challenge – MA029 – Offices, Property & Estates

MA029 Offices, Property & Estates	Values (m)
Scottish Water forecast expenditure (2024-25 prices)	£66
Cost challenge (2024-25 prices)	-£13
Draft Determination allowance (2024-25 prices)	£53

4.2 WICS Cost Challenge Principle

4.2.1 WICS has applied a 20% catch-up efficiency challenge to this investment area, based on the following points:

- "Offices, property and estates investment of £66 million. Given the limited information and cost justification provided by Scottish Water in the relevant management approach (MA029), we consider that Scottish Water's forecast expenditure for office repairs and refurbishments is too high, given the unit costs presented in the management approach. Based on conservative estimates of repair and refurbishment costs, we consider that there is scope for a 20% cost challenge".
- "We have some concerns with the cost projections provided by Scottish Water. Most notably, the proposed spend on repair and refurbishment of office properties cannot be reconstructed using the proposed intervention rates and costs within the management approach. Even a conservative estimate of the unit costs is lower for both repair (18%) and refurbishment (48%). Deducting these costs from the expected expenditure within the MA, we find a potential 20% reduction, which we propose applying to Scottish Water's proposed investment. Table 78 below summarises our analysis."

Table 78: MA029 cost challenge calculation

Office Repair and Replace Cost Challenge	Repair	Replace
Unit cost provided within management approach[84]	£44,000	£1,065,000
Derived unit costs[85]	£82,000	£1,296,000
Difference as a percentage (rounded)	-47%	-18%
Total cost of investment[86]	£27.6m	£40.5m
Cost challenge using the unit costs provided in the management approach	-£12.9m	-£7.2m
Total Challenge Calculation	**Combined**	
Total cost allocation with the MA	£100.1m	
Cost challenge for office repair and replacement	-£20.1m	
Difference as a % (rounded)	20%	

Figure 1: MA029 Cost Challenge Calculation

4.3 Scottish Water Costing Evidence

4.3.1 The table below summarises the costing approach underpinning the Management Approach:

Table 13: Costing Approach – MA029

Costing evidence	Value	Commentary
Cost source	Historic project costs, external quotes, consultancy estimates	Basis of MA029 investment forecasts
Cost base	2024/25 prices	Standardised cost base
Supporting evidence	44 individual cost lines	Evidence available for all cost elements
Investment area challenged by WICS	Office and depot refurbishment and repair costs	Represents only part of the overall MA029 programme

4.3.2 MA029 costs are derived from historical project outturns, external quotations, consultancy estimates and operational cost forecasts. All costs have been normalised to a 2024/25 cost base and are supported by documented evidence. Evidence is available for all 44 costing lines included within the Management Approach.

Table 14: MA029 Costs, 24/25 prices

Need Description	Value (2024-25 prices)
Offices and Depots	£33,468,000
Operational Wastewater sites	£6,212,000
Operational Water site	£6,152,000
Non Water Catchment Land & Buildings	£14,063,000

Need Description	Value (2024-25 prices)
Water Catchment Land & Buildings	£5,299,000
Redundant Assets Programme - Water sites	£1,126,000
Redundant Assets Programme - Wastewater sites	£71,000
Total	£66,391,000

4.3.3 WICS' challenge focuses specifically on office and depot repair and refurbishment activities rather than the wider MA029 investment programme. Offices and Depots account for approximately 50% of the investment within this MA.

4.4 Scottish Water Cost Challenge Response

4.4.1 Scottish Water has reviewed the cost challenge against the evidence provided in the Management Approach. Scottish Water's response to each element of the cost challenge is set out below:

Table 15: Scottish Water's Response

WICS Cost Challenge	Scottish Water Response
1. Given the limited information and cost justification provided by Scottish Water in the relevant management approach (MA029), we consider that Scottish Water's forecast expenditure for office repairs and refurbishments is too high, given the unit costs presented in the management approach.	Scottish Water does not agree that the MA lacks sufficient cost justification. The office repair and refurbishment costs included within MA029 are supported by historical project costs, external quotations, consultancy inputs and forecast maintenance requirements. Evidence supporting the key unit rates has been provided and demonstrates that the investment values are based on actual delivery experience and informed cost estimates rather than unsupported assumptions.
2. The proposed spend on repair and refurbishment of office properties cannot be reconstructed using the proposed intervention rates and costs within the management approach. Even a conservative estimate of the unit costs is lower for both repair (18%) and refurbishment (48%).	Scottish Water has reviewed the methodology applied by WICS and does not agree with the conclusions reached. The benchmarking calculation underpinning the proposed challenge is not based on a like-for-like comparison of costs and outputs. WICS has derived benchmark unit rates by combining repair and refurbishment expenditure whilst comparing this against refurbishment outputs only. As refurbishment outputs relate solely to refurbishment activity, this approach materially distorts the resulting unit rates and overstates the implied cost of delivery. Scottish Water can evidence the unit rates used within MA029, which are based on historical project costs, supplier quotations, consultancy estimates and forecast maintenance requirements. The benchmarking calculation should therefore be reviewed, as the conclusion that MA029 unit rates are overstated is not supported by an equivalent comparison of costs and outputs. WICS' assessment also appears to refer to replacement activity within the offices and estates programme. Scottish Water notes that the MA029 investment programme

WICS Cost Challenge	Scottish Water Response
	principally comprises repair and refurbishment activities and does not include a programme of full asset replacement within the £66m forecast expenditure. Any benchmarking or efficiency assessment based upon replacement assumptions does not accurately reflect the scope of the planned investment and should therefore be reviewed.
3. Deducting these costs from the expected expenditure within the MA, we find a potential 20% reduction, which we propose applying to Scottish Water's proposed investment.	The proposed 20% reduction is not supported by the evidence presented. The challenge relates specifically to office and depot repair and refurbishment investment, which represents only part of the overall MA029 programme. WICS has not identified or quantified any underlying inefficiency within the wider MA029 programme that would justify applying a 20% challenge to the full allowance. Furthermore, the unit rates included within MA029 are not intended to represent average maintenance interventions. The Management Approach recognises that a significant proportion of forecast expenditure relates to larger value refurbishment projects that are inherently more complex, higher risk and more costly than routine repair activities. The forecast expenditure therefore reflects the anticipated scale and complexity of refurbishment activity required during SRC27 and should not be assessed using simplified average intervention assumptions.
4. 20% cost challenge	Notwithstanding Scottish Water's disagreement with the proposed benchmarking methodology, the challenge has been derived from concerns relating specifically to office and depot repair and refurbishment activities. Offices and Depots account for approximately £33.5m of the £66.4m MA029 programme. No evidence has been presented to suggest inefficiency within the remaining investment areas, including operational water sites, operational wastewater sites, catchment land and buildings, and the redundant assets programme. Consequently, even if a challenge were considered appropriate, it should only be applied to the relevant offices and depots investment category rather than the full MA029 allowance. Application of the challenge to the entire MA029 programme materially overstates the quantum of any potential reduction.

4.5 Scottish Water Proposed Reinstatement Value for Final Determination: +£13M

4.5.1 Scottish Water requests full reinstatement of the £13m Offices, Property & Estates cost challenge in the Final Determination.

4.5.2 In addition, the challenge appears to have been applied to the full £66m MA029 programme despite the underlying analysis relating only to offices and depots, which represent approximately 50% of total expenditure. The challenge is

therefore to both the methodology and quantum. Scottish Water considers that the challenge should be removed in full. If WICS maintains that some adjustment remains appropriate, the challenge should be recalculated using a like-for-like comparison and restricted only to the relevant offices and depots investment category.

5 MA034 Customer Meters

5.1 WICS Cost Challenge Value: -£9.4M

Table 16: WICS Cost Challenge – MA034 Customer Meters

MA034 Customer Meters	Values (m)
Scottish Water forecast expenditure (2024-25 prices)	£60
Cost challenge (2024-25 prices)	-£9
Draft Determination allowance (2024-25 prices)	£51

5.2 WICS Cost Challenge Principle

5.2.1 WICS has applied a 15% catch-up efficiency challenge to the MA034 Consumer Meters programme based on the following:

- WICS acknowledges that Scottish Water has demonstrated the need for investment in rolling out smart meters to non-domestic properties but considers the proposed costs to be materially higher than those of companies in England and Wales.

- WICS calculates this as a unit cost of approximately £463 per meter upgrade, £1,358 per new installation and an overall average unit cost of approximately £495 per meter (2024-25 prices). WICS compared these costs against median unit costs in England and Wales and noted that Scottish Water's upgrade costs are materially higher than the benchmark values. WICS references benchmark upgrade costs of approximately £95 per meter and new installation costs of approximately £448 per meter (2024-25 prices).

5.3 Scottish Water Costing Evidence

5.3.1 The table below summarises the costing approach underpinning the Management Approach:

- The cost build-up is based on detailed bottom-up assessment of the scope required to deliver non-domestic smart metering across Scotland and is supported by framework delivery rates, supplier procurement information and programme-specific delivery assumptions.

Table 17: Costing Approach - MA034

Costing evidence	Value	Commentary
Management approach cost base	Draft v2 Management Approach	Provides the cost build-up for the intervention types required to deliver the MA034 programme.
Framework delivery costs	DV2 framework costs (Clancy)	Primary delivery cost source used to inform metering interventions.
Additional delivery allowances	Accommodation, traffic management and enabling costs	Recognises site-specific and enabling activity costs not reflected in a simple asset benchmark rate.
Replacement category assessment	Proportion of assets in each replacement category	Reflects programme mix and the range of intervention types required.
Regional delivery uplifts	Mainland north, complex mainland north and island uplifts	Reflects Scotland-specific geography, access constraints and delivery complexity.
Smart meter procurement	Competitive procurement exercise for smart meter assets (Honeywell)	Provides increased cost certainty for asset pricing. Supporting rate tables are commercially sensitive and are not reproduced in this response.

5.3.2 MA034 costs are derived from detailed bottom-up cost development using assured DV2 framework rates, programme-specific delivery allowances, regional uplifts and asset-category assumptions. Prices include, where applicable, meter assets, chambers, pipework, valves, fittings, transition couplings, excavation, reinstatement, making good surfaces, spoil removal, backfilling, site assessment activities and verification of meter sizing and suitability. Weightings are based on the proportion of assets in each intervention category to derive representative programme costs.

5.3.3 Scottish Water's derived unit rate is a bundled programme cost. It includes the smart meter asset together with the field activities required to deliver installations in practice, including survey work, excavation and reinstatement where required, traffic management, abortive visits, regional uplifts and other enabling activities. These activities are necessary to deliver the programme outputs and are not limited to the supply or replacement of the meter asset itself.

5.3.4 Since submission of the SR27 Business Plan, Scottish Water has completed formal competitive procurement exercises for both smart meter assets and field delivery installation activities. The smart meter procurement attracted nine market participants and resulted in the appointment of Honeywell following a competitive evaluation process. Delivery rates are derived from Scottish Water's Delivery Vehicle 2 framework, which was established through a competitive market procurement process involving ten bidders and four final tender submissions. Accordingly, both smart meter asset costs and field delivery rates supporting the Management Approach are based on competitively procured market pricing and represent the efficient market cost of delivery in Scotland.

5.3.5 Smart Meter Asset: This procurement attracted nine market participants at pre-qualification stage, with the final framework awarded to Honeywell following a competitive evaluation process weighted equally between technical and commercial assessment.

5.3.6 Field Delivery Installation: Delivery rates are based on Scottish Water's Delivery Vehicle 2 framework, which was subject to a competitive market procurement process involving ten bidders and four final tender submissions.

5.3.7 Both the smart meter asset costs and field delivery installation rates underpinning the Management Approach are not immature, estimated rates, they have been established through competitive market processes and represent the efficient market cost of delivery.

5.3.8 The refreshed assessment indicates direct delivery costs of approximately £60.6m, comprising approximately £12.8m of smart meter assets and £47.8m of field delivery activities. Even when normalised to the SR27 output assumptions of approximately 130,000 meter upgrades, direct delivery costs remain approximately £58m. These costs exclude wider programme costs associated with programme management, systems, governance, market readiness and transition activities. Accordingly, the refreshed market-tested assessment indicates that the challenged allowance of approximately £51m falls materially below the cost of meter assets and field delivery activities alone.

5.4 Scottish Water Cost Challenge Response

5.4.1 Scottish Water has reviewed the cost challenge against the evidence provided in the Management Approach and the findings set out in WSP's WICS Engineering Review of SR27 Business Plan.

5.4.2 Scottish Water's response to each element of the cost challenge is set out below:

Table 18: Scottish Water's Response

WICS Cost Challenge	Scottish Water Response
1. Scottish Water's proposed costs are materially higher than those of companies in England and Wales, with insufficient evidence to explain the difference.	Scottish Water does not consider the England and Wales comparison to represent a like-for-like benchmark and therefore does not consider it a reliable basis on which to infer inefficiency. The benchmark appears to be derived predominantly from household smart metering programmes delivered within dense customer populations and mature metering environments. By contrast, MA034 is a 100% non-domestic programme delivered across a geographically dispersed operating area, including remote mainland and island locations. Approximately 13% of the meter estate is located within North and Island regions where additional travel, accommodation and logistical requirements represent unavoidable cost drivers. These structural differences materially affect installation productivity and cost and limit the applicability of direct benchmark comparisons. The benchmark appears to be derived principally from household smart metering programmes, whereas MA034 is a 100% non-domestic programme, creating a fundamental difference in programme composition and delivery requirements.
2. The smart meter upgrade unit cost is £463, compared with a median cost of £95 in England and Wales (2024/25 prices).	The comparison of Scottish Water's average programme cost against a benchmark upgrade cost of £95 does not compare equivalent scopes of activity. Scottish Water's derived unit rate is a bundled programme delivery cost incorporating smart meter assets, surveys, excavation, reinstatement, traffic management, regional uplifts, abortive visits and other enabling activities necessary to complete installations in practice. Scottish Water does not have visibility of the detailed cost composition underpinning the benchmark and therefore cannot be satisfied that the comparison reflects equivalent delivery scope. To the extent that enabling activities are excluded from the benchmark, the resulting efficiency gap will be materially overstated. The comparison

WICS Cost Challenge	Scottish Water Response
	therefore does not provide reliable evidence that Scottish Water's programme costs are inefficient.
3. WICS has applied a 15% catch-up efficiency challenge across the investment area.	The challenge applies a broad reduction to a programme where the underlying cost evidence is supported by both detailed bottom-up cost development and market-tested procurement information. Scottish Water's unit rates are derived from assured DV2 framework rates, delivery partner schedules of rates, asset-type weightings and region-specific delivery allowances. Scottish Water has subsequently refreshed its analysis using actual procured smart meter costs, current delivery partner rates and the latest understanding of the meter estate. This analysis indicates direct delivery costs of approximately £60.6m, comprising approximately £12.8m of smart meter assets and £47.8m of field delivery activities. Even when normalised to the SR27 output assumptions, direct delivery costs remain approximately £58m. These costs exclude wider programme costs associated with programme management, systems, governance, market readiness and transition activities. The challenged allowance of approximately £51m therefore falls materially below the market-tested cost of meter assets and field delivery activities alone. WICS has not identified or quantified any specific inefficiency within Scottish Water's cost build-up, procurement approach or delivery assumptions. The 15% challenge therefore reduces the allowance without demonstrating that the underlying costs are excessive or inefficient. The costs underpinning the Management Approach are not based on early-stage estimating assumptions but on competitively procured supplier pricing and delivery rates. As such, the costs represent the market-tested cost of delivery and provide direct evidence of efficient pricing within the Scottish market. WICS has not identified any specific inefficiency within Scottish Water's procurement approach, schedules of rates, installation assumptions, regional uplifts or

WICS Cost Challenge	Scottish Water Response
	cost build-up methodology. Instead, the challenge is derived from comparison with an external benchmark that is not demonstrably comparable in terms of programme composition, geography or scope. The evidence therefore supports removal of the challenge rather than application of a further efficiency adjustment.

5.5 Scottish Water Proposed Reinstatement Value for Final Determination: +£9M

5.5.1 Scottish Water's position is that the MA034 Customer Meters cost challenge should be removed in full. The evidence available does not demonstrate inefficiency within Scottish Water's proposed costs and does not provide a robust basis for applying a 15% catch-up efficiency adjustment.

5.5.2 The programme is supported by market-tested pricing, detailed bottom-up cost development and programme-specific delivery assumptions.

5.5.3 The England and Wales benchmark relied upon by WICS is not comparable to the scope, geography or delivery model associated with Scottish Water's non-domestic metering programme. The comparator evidence is principally drawn from much larger and more mature smart metering programmes in England and Wales, where companies can benefit from established delivery frameworks, larger deployment volumes, denser customer populations and more repeatable household-metering activity. MA034 is materially different: it relates to non-domestic smart metering across Scotland, with geographically dispersed sites, access constraints, varied installation requirements and regional delivery uplifts. These differences make direct benchmarking against England and Wales inherently limited and do not provide a reliable basis for concluding that Scottish Water's costs are inefficient.

5.5.4 Since submission of the SR27 Business Plan, Scottish Water has refreshed its analysis using actual procured smart meter costs, current delivery partner schedules of rates and the latest understanding of the meter estate. This assessment indicates direct delivery costs of approximately £60.6m, comprising approximately £12.8m of smart meter assets and £47.8m of field delivery activities. Even when normalised to the SR27 output assumptions, direct delivery costs remain approximately £58m. These figures exclude wider programme costs associated with programme management, systems, governance, market readiness and transition activities. Based on current

market-tested evidence, Scottish Water has a high level of confidence in the MA034 pricing, particularly for non-domestic properties, and the challenged allowance of approximately £51m falls materially below the cost of meter assets and field delivery activities alone.

5.5.5 WICS has not identified or quantified any specific inefficiency within Scottish Water's cost build-up, procurement approach or delivery assumptions and has therefore not demonstrated a robust basis for applying a 15% efficiency challenge across the programme. Furthermore, the challenged allowance of approximately £51m falls below Scottish Water's refreshed assessment of direct delivery costs alone, supported by competitively procured meter pricing and current delivery partner schedules of rates, before wider programme management, systems, governance and market readiness costs are considered. The basis for the challenge remains a comparison against external benchmark rates for which Scottish Water does not have sufficient transparency regarding scope, composition or comparability. In contrast, Scottish Water has demonstrated that the MA034 costs are supported by competitively procured supplier pricing and market-tested delivery rates. Accordingly, Scottish Water considers that the £9m challenge should be removed in full.

6 MA041 Lead Management

6.1 WICS Cost Challenge Value: -£3M

Table 19: WICS Cost Challenge – MA041 – Lead Management

MA041 Lead Management	Values (m)
Scottish Water forecast expenditure (2024-25 prices)	£36
Cost challenge (2024-25 prices)	-£3
Draft Determination allowance (2024-25 prices)	£33

6.2 WICS Cost Challenge Principle

6.2.1 WICS has applied a 7% cost challenge to this investment area, based on the following point:

- Lead communication pipes replacement, where we consider that there is scope for a 7% efficiency challenge, based on the results from our benchmarking of Scottish Water's costs against those of the companies in England and Wales. This also aligns with the results from Scottish Water's benchmarking in the final business plan.

6.3 Scottish Water Costing Evidence

6.3.1 The table below summarises the costing approach underpinning the Management Approach response:

Table 20: Costing Approach - MA041

Costing evidence	Value	Commentary
Primary evidence source	Evidence pack	Sets out the basis for the investment value, including historic delivery costs, internal benchmarking and project-specific adjustments.
Historic and current run rates	Metre average SR21 rate	Derived from projects of a similar scope and used to support the reasonableness of the planned allowance.
Internal benchmarking	Tendered rates / prices	Indicates that submitted costs appear reasonable when compared with available tendered rates and prices.

6.3.2 The MA041 costing is primarily supported by an evidence pack. The evidence sets out the basis for the investment value, including historic delivery costs,

internal benchmarking and specific project adjustments relevant to lead communication pipe replacement.

6.3.3 The costing is based on historic and current run rates for projects of a similar scope, which show an average SR21 rate per metre. Costs have also been benchmarked internally using tendered rates and prices, which indicate that the submitted costs are reasonable.

6.3.4 Based on the efficiency challenge presented within the draft determination, Scottish Water have equalised the unit rate to take into consideration non-comparable expenditure and associated intervention volumes whereby project specifics elements have been identified. The two specific projects in Gorgie and Larchfield include for the full replacement of both lead communication and customer-side supply pipes, with the latter aspect presenting additional challenges and costs compared to replacing communication pipes alone. The projects also include additional activities and costs in addition to replacing pipes alone (e.g. sampling all properties, customer engagement) and, therefore, Scottish Water views that the inclusion of these projects to determine a unit cost for lead comms pipe replacement is not appropriate. The tables below therefore remove these from the dataset:

Table 21: MA041 Unit Rate Normalisation

MA041 Unit rate normalisation	Cost (£m)	Units	Unit Rate
Scottish Water forecast expenditure	36.18	24,301	£1,489
Less Lead Sampling Programme	-1.14	-6,301	
Core programme subtotal	35.04	18,000	£1,946
Less Gorgie DMA & Larchfield	-8.67	-1,000	
Like-for-like communication pipe replacement programme	**26.37**	**17,000**	**£1,551**

Table 22: Efficiency Score Following Equalisation

Efficiency Score following equalisation	Values
Scottish Water Adjusted forecast unit cost per pipe (2024-25 prices)	£1,551
Median Unit Cost (2024-25 prices)	£1,820
Scottish Water assessed efficiency score relative to median	0.85

6.3.5 Scottish Water has undertaken a benchmarking normalisation exercise to isolate the cost of comparable lead communication pipe replacement activities. This removes expenditure and intervention volumes associated with non-comparable activities to derive a like-for-like unit rate suitable for external benchmarking assessment.

6.3.6 WICS has benchmarked a blended programme rate derived from aggregate Final Business Plan tables rather than a like-for-like delivery rate for standard lead communication pipe replacement activities. After normalisation of non-comparable scope, Scottish Water's adjusted unit rate of £1,551 is below the benchmark median of £1,820, demonstrating that the programme compares favourably with industry benchmarks and does not evidence inefficiency.

6.4 Scottish Water Cost Challenge Response

6.4.1 Scottish Water has reviewed the cost challenge against the evidence provided in the Management Approach.

6.4.2 Scottish Water's response to each element of the cost challenge is set out below:

Table 23: Scottish Water's Response

WICS Cost Challenge	Scottish Water Response
1. WICS has applied a 7% catch-up efficiency challenge following benchmarking of Scottish Water costs against companies in England and Wales, and states that this aligns with Scottish Water's final business plan benchmarking.	The challenge does not demonstrate an underlying inefficiency within the Lead Communication Pipe Replacement programme. The efficiency assessment has been based on a blended programme unit rate that includes non-comparable activities and project-specific expenditure. When assessed on a like-for-like basis, the adjusted unit rate is below the benchmark median cost and therefore does not support application of a catch-up efficiency challenge.
2. WICS has derived a unit rate of £1,946 per pipe from the Final Business Plan allowance and benchmarked this against companies in England and Wales.	The £1,946 unit rate is not a direct delivery rate for standard lead communication pipe replacement. It is a blended programme rate derived from aggregate Final Business Plan tables that include a range of activities and were not designed to support external cost benchmarking. The resulting rate incorporates costs and volumes associated with non-comparable activities, including lead sampling and specific lead reduction projects, and therefore does not provide a like-for-like basis for comparison with external benchmark data.
3. WICS has applied a 7% efficiency challenge based on the derived programme unit rate.	Scottish Water has undertaken a unit rate equalisation exercise to isolate the cost of standard lead communication pipe replacement activities. This removes non-comparable expenditure and associated intervention volumes relating to: Lead Sampling Programme (£1.14m; 6,301 samples) Gorgie DMA (£3.64m) Larchfield Lead Reduction Project (£5.03m) Following rate equalisation, the comparable programme allowance reduces from £35.04m across 18,000 interventions (£1,946 per intervention) to £26.37m across 17,000 interventions (£1,551 per intervention). The adjusted unit rate of £1,551 represents the appropriate like-for-like benchmark comparator and demonstrates that the programme is materially lower than the median benchmark cost of £1,820 per pipe.

WICS Cost Challenge	Scottish Water Response
	Based on this adjusted rate, Scottish Water achieves an efficiency score of 0.85 relative to the industry median, indicating performance that is more efficient than the comparator benchmark rather than evidence of inefficiency. Accordingly, the proposed 7% catch-up efficiency challenge is not supported.

6.5 Scottish Water Proposed reinstatement value for final determination: +£3M

6.5.1 Scottish Water requests full reinstatement of the £3m Lead Management cost challenge in the Final Determination.

6.5.2 The proposed challenge is based on a unit rate derived from aggregated Final Business Plan tables that were not intended to provide a benchmarking rate for standard lead communication pipe replacement activities. The resulting £1,946 unit rate represents a blended programme cost that includes lead sampling activities and project-specific lead reduction schemes with materially different scopes, including customer-side pipe replacement, customer engagement and enhanced sampling requirements. As such, the derived unit rate does not provide a like-for-like basis for external capital cost benchmarking.

6.5.3 Scottish Water has undertaken a benchmarking normalisation exercise to isolate the cost of comparable lead communication pipe replacement activities. Following removal of non-comparable expenditure and associated intervention volumes, the adjusted programme allowance reduces to £26.37m across 17,000 interventions, resulting in a benchmarkable unit rate of £1,551 per intervention. This adjusted rate is materially below the industry median benchmark of £1,820 per intervention and produces an assessed efficiency score of 0.85 relative to the median.

6.5.4 The evidence demonstrates that the proposed challenge arises from benchmarking a blended programme rate rather than a comparable delivery rate for standard lead communication pipe replacement activities. When assessed on a like-for-like basis, Scottish Water's forecast costs compare favourably with industry benchmarks and do not indicate the presence of inefficiency. Accordingly, Scottish Water considers that the basis for the proposed 7% catch-up efficiency challenge is not evidenced and requests full reinstatement of the £3m cost challenge within the Final Determination.

7 MA043 Wastewater Treatment Works - Secondary & Tertiary Treatment

7.1 WICS Cost Challenge Value: -£11M

Table 24: WICS Cost Challenge – MA043 Wastewater Treatment Works – Secondary & Tertiary Treatment

MA043 Wastewater Secondary and Tertiary Treatment	Values (m)
Scottish Water forecast expenditure (2024-25 prices)	£112
Cost challenge (2024-25 prices)	-£11
Draft Determination allowance (2024-25 prices)	£100

7.2 WICS Cost Challenge Principle

7.2.1 WICS has applied a 10% catch-up efficiency challenge to this investment area, based on the following points:

- "The programme unit costs are based on 'representative assets', whereas the associated management approach (MA043) lacks detail on variations in size, type, service, and actuation of the assets, which would impact their unit costs. Thus, we consider that these unit costs may not be representative of Scottish Water's assets covered by this programme. We apply a 10% cost challenge in this area, which aligns with the advice of our engineering consultants, who reviewed it and suggested that a 7%-10% cost challenge may be appropriate".
- "External benchmarking by (ChandlerKBS/Cumming Group) shows material cost variances to the industry median benchmark for two of the associated cost curves (cost variances of over 50%)". WICS also acknowledged that "Scottish Water has noted that further data collection is required and will continue to look at sourcing additional data points to improve confidence in this area. We consider that the costs for the constituent assets in the programme are reasonable compared to the industry benchmark".
- WSP noted that "the Membrane Filtration Plants (MEMX) costs covered by this programme are 168.5% higher than industry average and 213.2% higher than the industry upper quartile. ChandlerKBS stated this was because the cost model uses a linear cost curve, rather than a power curve that the benchmark cost data uses. There are 16 units of this kind included in the programme detailed in MA043. Biological Aerated Flooded Filters (BAFX) were also highlighted as a cost model with greater than 50% variance to industry average. This was stated to be because the model uses a fixed cost, unaffected by the yardstick values and therefore should be

reviewed and remodelled. Scottish Water have provided an approach on how they intend to address the variations in the benchmarking exercise".

7.3 Scottish Water Costing Evidence

7.3.1 The table below summarises the costing approach underpinning the Management Approach:

Table 25: Costing Approach - MA043

Costing evidence	Value	Commentary
Asset deterioration models	ASM / SIM	Primary cost source for MA043 asset predictions.
Cost model release	R2309	Current Scottish Water assured cost model release.
Asset data source	AR24	Based on Annual Return 2024 asset inventory.
Prediction models challenged by WICS	BAFXC and MEMX models	Collectively account for only a small proportion of total programme costs.

7.3.2 MA043 investment costs are derived primarily from Scottish Water's Asset Stewardship Model (ASM) and Strategic Intervention Modeller (SIM), using Annual Return 2024 asset data and the current R2309 cost model release. These outputs are produced through Scottish Water's established and assured costing processes.

7.3.3 The representative assets referenced in MA043 supported the policy option appraisal and the derivation of average intervention costs. They were not used as a substitute for programme-wide asset data. The final SR27 investment costs and outputs are based on the full MA043 asset population.

7.3.4 WICS has identified two prediction models with material variances against external benchmarks. Together, however, these models account for only 5.1% of total prediction model costs. WICS also acknowledges that the constituent asset costs within the programme are generally reasonable when compared with industry benchmarks.

7.4 Scottish Water Cost Challenge Response

7.4.1 Scottish Water has reviewed the cost challenge against the evidence provided in the Management Approach and the findings set out in WSP's WICS Engineering Review of SR27 Business Plan.

7.4.2 Scottish Water's response to each element of the cost challenge is set out below:

Table 26: Scottish Water's Response

WICS Cost Challenge	Scottish Water Response
1. The programme unit costs are based on representative assets, whereas MA043 lacks detail on variations in size, type, service and actuation of the assets. Thus, we consider that these unit costs may not be representative of Scottish Water's assets covered by this programme."	The representative assets referenced in MA043 were used solely to support the Secondary and Tertiary Treatment Policy Options Appraisal and the assessment of alternative investment strategies. The reported SR27 costs and outputs are derived from ASM and SIM prediction model outputs using asset-specific intervention costs and individual asset yardsticks. These cost models inherently account for differences in asset size, capacity and asset class across the full MA043 asset population. Scottish Water therefore does not consider that the use of representative assets within the option appraisal process undermines the representativeness of the final programme costs.
2. External benchmarking by ChandlerKBS/Cumming Group shows material cost variances to the industry median benchmark for two of the associated cost curves (cost variances of over 50%).	Scottish Water notes that WICS also acknowledges that the constituent asset costs within MA043 are generally reasonable when compared with industry benchmarks. The benchmark variances identified relate to a limited number of cost models rather than the programme as a whole. These variances do not demonstrate an underlying inefficiency across MA043 and should be considered in the context of a programme that is principally derived from asset-specific intervention costs and established Scottish Water cost models.
3. The Membrane Filtration Plants (MEMX) and Biological Aerated Flooded Filters (BAFX) cost models show material variance to industry benchmarks.	Scottish Water has reviewed the specific cost models cited by WICS. BAFXC is a fixed-cost model and sits significantly below industry benchmark levels. MEMX1, which is specifically referenced in the challenge, is not used to price this programme; the relevant wastewater membrane filtration model is MEMX2. Although MEMX2 benchmarks above industry comparators, BAFXC and MEMX2 together account for only approximately 5.1% of total prediction model costs within MA043, with MEMX2 accounting for approximately 4.8%. This represents around £5.24m of prediction model costs. Applying a 10% adjustment only to these challenged models would therefore reduce the allowance by approximately £0.5m, not the £11m proposed by WICS. Other material cost models benchmark more favourably. Sedimentation tank asset models, for example, represent approximately 29% of prediction model costs and benchmark 40.6% below the industry average and 14.6% below the upper quartile. Variances affecting a limited proportion of programme costs do not justify a 10% challenge across the full MA043 allowance.

7.5 Scottish Water Proposed Reinstatement Value for Final Determination: +£11M

7.5.1 Scottish Water requests full reinstatement of the £11m Wastewater Secondary and Tertiary Treatment cost challenge in the Final Determination.

7.5.2 MA043 costs are derived principally from ASM and SIM outputs using asset-specific intervention costs, Annual Return asset data and Scottish Water's established costing processes. The benchmark variances identified by WICS relate to a limited number of models that account for only approximately 5.1% of total prediction model costs. In addition, MEMX1, which is specifically cited in the challenge, is not used to price this programme.

7.5.3 The challenged BAFXC and MEMX2 models account for approximately £5.24m of prediction model costs. A 10% adjustment to those costs would reduce the allowance by approximately £0.5m which is substantially less than the £11m challenge applied by WICS. Other material models benchmark more favourably, including sedimentation tank assets, which represent approximately 29% of prediction model costs and benchmark below both the industry average and upper-quartile values.

7.5.4 Concerns relating to approximately 5.1% of modelled costs do not provide a sound basis for applying a 10% efficiency challenge across the entire MA043 allowance. WICS has not identified or quantified any underlying inefficiency in the wider programme. The £11m challenge is therefore disproportionate and contradictory to the evidence cited and should be removed in full.

8 MA058 Water Pumping Stations

8.1 WICS Cost Challenge Value: -£5M

Table 27: WICS Cost Challenge – MA058 Water Pumping Stations

MA058 Water Pumping Stations	Values (m)
Scottish Water forecast expenditure (2024-25 prices)	£48
Cost challenge (2024-25 prices)	-£5
Draft Determination allowance (2024-25 prices)	£43

8.2 WICS Cost Challenge Principle

8.2.1 WICS has applied a 10% cost challenge to this investment area, based on the following points:

- Water pumping stations, where Scottish Water's analysis in the relevant management approach (MA058) suggests that the highest unit cost maintenance intervention could be £220,000 (for replacing a large pump of £180,000 and adding a 20% uplift for temporary works). However, the average unit cost in the business plan is £300,000 (36% higher than the highest unit cost estimate in MA058), and we would expect the proposed interventions to range in size. As such, we consider a 10% cost challenge to be reasonable and acknowledge that other factors, such as differences in the price base and other activities, could explain some of the difference.

8.3 Scottish Water Costing Evidence

8.3.1 WICS has derived an average intervention cost of approximately £300,000 by dividing total MA058 programme expenditure by 160 interventions identified within the Business Plan. Scottish Water does not consider this to be a representative intervention cost. Further review confirms that the 160 units identified within the Business Plan relate to replacement activity only and do not represent the full scope of refurbishment, repair and replacement activity delivered through MA058. Consequently, dividing total programme expenditure by replacement-only interventions does not provide a like-for-like assessment of programme costs.

8.3.2 The further tables below provide a summary of the business plan investment under this Management Approach. Scottish Water's forecast expenditure is derived from planned and responsive maintenance activity across refurbishment, repair and replacement interventions. Following further review, the 160 units identified within the business plan are replacement interventions only, not the total number of maintenance interventions across the Management Approach.

Table 28: Summary of Business Plan Investment

Business Plan MA058	Total in SRC27 (24/25) Post eff (£)	Total in SRC27 (Units)	Unit Cost (£)
565-Planned	16,793,000	55.43	302,974
565-Responsive	25,446,000	83.99	302,947
566-Planned	2,233,000	7.54	295,981
566-Responsive	3,786,000	12.79	295,919
Total	48,258,000	159.76	302,065

Refurb expenditure (£)	Refurb expenditure (%)	Repair Expenditure (£)	Repair Expenditure (%)	Replace expenditure (£)	Replace expenditure (%)
3,279,414	19.53%	6,276,166	37.37%	7,237,418	43.10%
4,969,212	19.53%	9,510,113	37.37%	10,966,673	43.10%
436,070	19.53%	834,554	37.37%	962,374	43.10%
739,347	19.53%	1,414,968	37.37%	1,631,683	43.10%
9,424,043		18,035,801		20,798,148	

	Total in SRC27 (24/25) Post eff (£)	Total in SRC27 (Units)	Unit Cost (£)
Replace	20,798,148	159.76	£130,183

8.3.4 WICS has calculated an average intervention cost of approximately £300K by dividing total programme expenditure by the 160 units identified in the business plan. This is not a like-for-like calculation. The 160 units relate to replacement interventions only and should not be treated as the total maintenance intervention volume for MA058

8.3.5 The business plan expenditure profile confirms that replacement activity accounts for £20.80m of expenditure and 160 replacement units, producing a replacement unit cost of £130,183. The remaining refurbishment and repair activity is still expected to be consistent with the Management Approach.

8.3.6 On this basis, the comparison between 160 business plan units and overall Management Approach investment interventions is not comparing the same scope of work. It compares a replacement-only business plan unit count with a wider Management Approach value that includes refurbishment, repair and replacement activity.

8.3.7 Accordingly, the apparent unit-rate variance identified by WICS arises from the interpretation of the business plan unit count rather than evidence that the underlying MA058 costs are overstated.

8.3.8 Further to the above, the table below summarises the key unit costs underpinning the Management Approach:

Table 29: Costs Underpinning MA058

Costing evidence	Value	Commentary
Pump replacement – small pump (WIC Band 1-3, <100kW)	£100,000	Average of MEICA replacement interventions in SIM (AR22).
Pump replacement – large pump (WIC Band 4-5, ≥100kW)	£180,000	Average of MEICA replacement interventions in SIM (AR22).
Additional percentage applied to responsive replacement interventions	+20%	There is currently limited data on the difference in cost for proactive vs. responsive replacement. An adjustment has been applied here to cover costs of temporary works (such as tankering) and clean up.
Pump refurbishment – small pump (WIC Band 1-3, <100kW)	£60,000	Average of MEICA refurbishment interventions in SIM (AR22).
Pump refurbishment – large pump (WIC Band 4-5, ≥100kW)	£60,000	Average of MEICA refurbishment interventions in SIM (AR22).
Pump repair – small pump (WIC Band 1-3, <100kW)	£10,000	Average of MEICA repair interventions in SIM (AR22).
Pump repair – large pump (WIC Band 4-5, ≥100kW)	£20,000	Average of MEICA repair interventions in SIM (AR22).
Pump inspection (Level 3 Specialist Assessment)	£1,000	There is currently no agreed cost of a pump inspection. This is an assumption that should be updated when further inspection cost data is available.
Pump maintenance (MST), per asset per year	£400	There is not currently data available for this for water network pumps. An assumption has been applied using data for other MEICA assets.
Civil asset replacement	£60,000	Average of civil replacement interventions in ASM (AR22).
Civil asset refurbishment	£5,000	Average of civil refurbishment interventions in ASM (AR22).
Civil asset repair	£500	Average of civil repair interventions in ASM (AR22).
Civil asset inspection	£1,000	There is currently no agreed cost of a civil asset inspection. This is an assumption that should be updated when further inspection cost data is available.
Establishment of condition-based monitoring capability	£5,000	Based on costs of Condition-Based Monitoring trials at water and wastewater sites, including the Exemplar project and Grundfos Machine Health.
Ongoing condition-based monitoring, per asset per year £1,000	£1,000	
Electricity consumption costs, per asset per year: • Standard, small (<100kW): £6,500 • Energy efficient, small (<100kW): £5,000 • Standard, large (≥100kW): £80,000 • Energy efficient, large (≥100kW): £65,000		Developed using the following assumptions: • Average size of small pumps <100kW: 10kW • Average size of large pumps ≥100kW: 150kW • Pumps operate up to 12 hours, 365 days • Electricity cost is 19p/kWh • Electricity efficient pumps reduce electricity consumption by approximately 20%
Discount rate	3.50%	

8.3.9 The unit rates included within MA058 were used to support optioneering and intervention selection. The Business Plan costs are derived from Scottish Water's asset investment modelling framework (ASM and SIM) using established cost curves and therefore represent the primary source of expenditure forecasting. Consequently, the unit-rate assumptions presented within the Management Approach should not be interpreted as direct Business Plan rates.

8.4 Scottish Water Cost Challenge Response

8.4.1 Scottish Water has reviewed the cost challenge against the evidence provided in the Management Approach and the underlying explanation provided by the Management Approach owner.

8.4.2 Scottish Water’s response to each element of the cost challenge is set out below:

Table 30: Scottish Water's Response

WICS Cost Challenge	Scottish Water Response
1. The management approach includes information on unit costs and the number of interventions. For example, the management approach provides the following assumption on average unit costs: • Pump replacement: £100,000 (small) to £180,000 (large), with an additional 20% uplift for responsive replacements to cover the cost of temporary works; • Pump refurbishment: £60,000 (small and large); and • Pump repair: £10,000 (small) to £20,000 (large) The final business plan includes investment of £48 million to deliver 160 asset interventions (a repair, refurbishment, or replacement), which results in a unit cost of around £300,000 per intervention.	Scottish Water does not consider the £300k value to be a representative intervention cost. The calculation is derived by dividing total programme expenditure by 160 replacement interventions only. The 160 units do not represent the full repair, refurbishment and replacement activity delivered through MA058.
2. We recognise that the £300,000 may include other activities associated with water pumping stations. However, we judge it high recognising: • the highest intervention cost, which would be around £220,000 for a responsive replacement of a large pump (£180,000 with the additional 20% uplift); and • the 160 interventions in the final business plan will comprise different interventions such as repairs and refurbishments at pumps of different sizes, all of which we would expect to be lower cost than the £220,000.	Scottish Water does not consider this comparison to be representative of MA058 delivery costs. The Business Plan expenditure includes refurbishment, repair and replacement activity, whereas the 160 units referenced by WICS relate to replacement interventions only. The resulting £300,000 intervention value is therefore derived from a comparison of different scopes of activity and does not provide an appropriate basis for assessing efficiency.
3. Given these points, we consider an additional cost challenge of 10% to be reasonable and acknowledge that other factors, such as differences in the price base and other activities, could explain some of the difference between the £300,000 (2024-25 prices) and the highest intervention cost. This results in a cost challenge of around £5 million, as set out in Table 17".	The apparent variance results from the interpretation of Business Plan unit volumes rather than evidence of inefficient expenditure. WICS has not identified or quantified any underlying delivery inefficiency and therefore the 10% challenge is not supported by the available evidence.

8.5 Scottish Water Proposed Reinstatement Value for Final Determination: +£5M

8.5.1 Scottish Water requests full reinstatement of the £5M MA058 Water Pumping Stations cost challenge in the Final Determination.

8.5.2 The challenge is founded on an assumed intervention cost of approximately £300,000 derived by dividing total MA058 programme expenditure by 160 replacement-only interventions identified within the Business Plan. Further review confirms that these units relate to replacement activity only and should not be interpreted as representing the total scope of refurbishment, repair and replacement activity delivered through MA058. The comparison applied by

WICS therefore does not compare like-for-like scopes of activity and does not provide evidence that programme costs are inefficient or overstated. WICS has not identified or quantified any underlying efficiency gap within the programme. Accordingly, Scottish Water considers that the £5m challenge is not supported by the available evidence and should be removed in full.

9 MA073 Metering & Flow Monitoring

9.1 WICS Cost Challenge Value: -£4M

Table 31: WICS Cost Challenge – MA073 Metering & Flow Monitoring

MA073 Metering & Flow Monitoring	Values (m)
Scottish Water forecast expenditure (2024-25 prices)	£41
Cost challenge (2024-25 prices)	-£4
Draft Determination allowance (2024-25 prices)	£37

9.2 WICS Cost Challenge Principle

9.2.1 WICS has applied a 10% cost challenge to this investment area, based on the following points:

- Our review of the final business plan shows that Scottish Water plans to deliver 8,726 maintenance interventions, which suggests a unit cost of around £4,900 per intervention (2024-25 prices). However, the management approach includes an allocation of £48 million to deliver around 22,000 maintenance interventions over the same period, which suggests a unit cost of around £2,200 per intervention (price base unclear from the management approach). As such, the cost per intervention in the final business is around twice that in the management approach. This suggests that the forecast cost in the final business plan is too high, and a further cost challenge is reasonable. In the appendices, section 1.3.53, WICS further states: "Scottish Water plans to deliver 8,726 maintenance interventions, which suggests a unit cost of around £4,900 per intervention.
- However, we also recognise that we are setting Scottish Water a more challenging forecast for the leakage outcome measure, and that there may be some interaction between the proposed investment and this measure (e.g., the maintenance of pressure-reduction valves). Balancing these different factors, we propose applying a smaller challenge of 10%.

9.3 Scottish Water Costing Evidence

9.3.1 The table below summarises the costing approach underpinning the Management Approach:

Table 32: Costing Approach - MA073

Costing evidence	Value	Commentary
Costing methodology	Informed judgement	Methodology informed by contractor quotations, P3M costs and past project costs.

Costing evidence	Value	Commentary
Contractor quotation evidence	WGM / RSE	Quotes from contractors were used as part of the evidence base for intervention rates.
Historic and system cost evidence	P3M / Capital Star / ALM	Past project costs and system data were used to inform and validate rates for distribution network interventions.
External analytical support	Mott MacDonald	Analysis produced rates for the range of interventions across distribution network assets and was validated by the costing team.

9.3.2 Scottish Water's forecast expenditure is derived from planned and responsive maintenance activity across refurbishment, repair and replacement interventions.

9.3.3 Following an internal review of the proposed SR27 investment outputs and unit costs for Repair, Refurbishment and Replacement, as set out in MA v2 Tables 54 and 55 and valued at £48.43m (Unconstrained £ value (2024-25 price base) from MA v2.0), Scottish Water will deliver these outputs proportionally within the SR27 forecast expenditure.

9.4 Scottish Water Cost Challenge Response

9.4.1 Scottish Water has reviewed the cost challenge against the evidence provided in the Management Approach and the underlying costing documentation. During this review, Scottish Water identified a discrepancy in the presentation of intervention volumes within the Business Plan table used by WICS in deriving an implied unit rate. This issue does not affect the underlying cost build-up or unit rates underpinning MA073, which remain consistent with the Management Approach. The apparent unit-rate variance therefore reflects the intervention volumes presented rather than any inefficiency in the underlying costs. As the challenge does not identify an efficiency gap with the unit rates, Scottish Water does not consider the £4m adjustment to be justified.

9.4.2 Scottish Water’s response to each element of the cost challenge is set out below:

Table 33: Scottish Water's Response

WICS Cost Challenge	Scottish Water Response
1. WICS has applied a 10% catch-up efficiency challenge to this investment area.	Scottish Water does not consider that a 10% challenge is supported by the evidence. The challenge is based on an apparent unit-rate discrepancy caused by missing units in the business plan unit count, rather than an identified inefficiency in the delivery of the Distribution Infrastructure programme.
2. WICS states that MA073 suggests a £2,200 unit cost, whereas the business plan data suggests a unit cost of £4,900, or 123% higher.	Scottish Water does not consider that the £4,900 figure is an appropriate representation of intervention costs within MA073. Following an internal review Scottish Water will deliver a range of outputs covering repair, refurbishment and replacement during SR27. This overstates the apparent average intervention cost by underestimating the wider Management Approach/SR27 intervention volume.
3. WICS references 8,726 maintenance interventions and proposes a conservative 10% challenge, noting possible interaction with leakage outcome measures.	Scottish Water recognises the interaction between leakage performance and maintenance activities. However, the challenge is founded on a comparison that does not align the volume of interventions being compared. Any efficiency imposed will hamper efforts to reach aspirational leakage targets. The apparent variance is driven by the treatment of volumes rather than evidence of excessive or inefficient cost.

9.4.3 In conclusion, the apparent unit-rate variance arises from the presentation of intervention volumes rather than inefficiency in the underlying costs. Scottish Water therefore considers that the £4m challenge is not supported by the evidence.

9.5 Scottish Water Proposed Reinstatement Value for Final Determination: +£4M

9.5.1 The challenge is based on an apparent unit-rate interpretation that results from a discrepancy in the presentation of intervention volumes within the Business Plan table rather than any inconsistency in the underlying cost evidence. The costs and unit rates underpinning MA073 remain consistent between the Management Approach and Final Business Plan and continue to be supported by the original evidence base. WICS has not identified or quantified any underlying inefficiency within the programme. Scottish Water therefore considers that the £4m challenge should be removed in full.

10 MA077 We Enhance Scotland's Environment: Carbon Capture

10.1 WICS Cost Challenge Value: -£8M

Table 34: WICS Cost Challenge – MA077 – Carbon Capture

Carbon capture	Values (m)
Scottish Water forecast expenditure (2024-25 prices)	£29
Cost challenge (2024-25 prices)	-£8
Draft Determination allowance (2024-25 prices)	£21

10.2 WICS Cost Challenge Principle

10.2.1 WICS has applied a 27% catch-up efficiency challenge to this investment area. The challenge is based on a comparison of Scottish Water's proposed expenditure against historic Scottish Water expenditure and comparator projects in England and Wales, expressed on a cost-per-hectare basis:

- *"Scottish Water is proposing £29 million of expenditure in this area. We compared this proposed expenditure with Scottish Water's previous investments, expressed in terms of £ per hectare of land established or supported for carbon capture. This comparison indicates that Scottish Water's historic expenditure is around 68% lower than its business plan proposal on a £ per hectare basis. We have also compared Scottish Water's projects to similar projects undertaken by companies in England and Wales. These comparisons indicate that expenditure of companies in England and Wales is 27% lower than Scottish Water's proposed expenditure. Based on the comparisons, we consider a 27% cost challenge appropriate, which is the lower of the two estimates".*
- *"We note that Scottish Water proposes to spend £14,510 per hectare on carbon capture in SRC27, which is significantly higher than both Scottish Water's historical expenditure (£4,610/ha) and similar projects in England and Wales (£10,570/ha). As such, we are proposing a cost challenge on this expenditure."*

10.2.2 WICS also notes that one carbon capture project, We Enhance Scotland's Environment 03 – Carbon Capture – Woodland Creation, appears to have an unrealistically low cost per hectare in SRC27 and suggests that correcting this could result in a greater cost challenge for carbon capture:

- We note that there is one carbon capture project (We Enhance Scotland's Environment 03 – Carbon Capture – Woodland Creation) appearing to have an unrealistic low cost per hectare in SRC27, which we suspect is due to an

error in the population of Table X. Correcting for this would result in a greater cost challenge for carbon capture.

10.3 Scottish Water Costing Evidence

10.3.1 The MA077 carbon capture allowance is supported by the Climate Change Mitigation SR27 Technical Appendix, supporting evidence packs and specialist programme knowledge. The allowance reflects the estimated cost of delivering carbon capture outcomes across Scottish Water's estate during SR27.

10.3.2 Scottish Water's proposed programme is materially different from historic activity and includes delivery across more challenging environments, including remote locations, variable terrain, access constraints, catchment management requirements, weather impacts and restrictions associated with drinking water catchments. We cannot just adopt the traditional peatland restoration in many areas, and woodland creation is constrained and has to adapt to the need to manage long term resilience of water supplies.

10.3.3 As per the information provided, the UU comparator used was for relatively straightforward restoration in the Pennine plateau, and as an indicative (not an outturn) cost. Scottish Water’s programme has significantly more woodland than the comparator companies, meaning the headline figures cannot be compared.

10.3.4 The £29m allowance also includes activities necessary to enable carbon capture outcomes, including surveys, assessments and supporting activities. Accordingly, Scottish Water does not consider that a simple cost-per-hectare comparison provides a like-for-like assessment of the proposed programme.

10.4 Scottish Water Cost Challenge Response

10.4.1 Scottish Water has reviewed the WICS challenge and does not consider that the proposed £8 million reduction is supported by a robust or like-for-like comparison. The challenge is derived from high-level benchmarking based on a cost-per-hectare metric. The challenge is not supported by a detailed assessment of the specific Scottish Water programme scope, delivery environment or cost build-up.

10.4.2 Scottish Water’s response to the cost challenge is set out below:

Table 35: Scottish Water's Response

WICS Cost Challenge	Scottish Water Response
1. WICS has compared Scottish Water's proposed expenditure with historic Scottish Water expenditure and comparator projects in England and Wales on a cost-per-hectare basis and applied a 27% challenge.	Scottish Water does not consider that the cost-per-hectare comparison provides a robust basis for an efficiency challenge. The analysis does not demonstrate comparability between the proposed SR27 programme, historic Scottish Water activity and comparator schemes in England and Wales. The proposed programme reflects materially different delivery conditions, including Scottish-specific terrain, access, weather, catchment management and drinking water supply constraints.
2. WICS has used a £14,510 per hectare figure derived from the £29m allowance and an assumed 2,000 hectares.	The £14,510 per hectare figure is a high-level average based on an early planning assumption. It does not reflect the full scope of programme benefits or the wider land management, peatland, grazing, fencing and catchment outcomes expected to be delivered through the programme.
3. WICS has concluded that Scottish Water's proposed expenditure is significantly higher than historic expenditure and comparator projects.	Historic Scottish Water expenditure is not a direct comparator where previous activity was undertaken in less complex landscapes and under materially different delivery conditions. The comparator schemes have not been demonstrated to be equivalent in scope, delivery environment, regulatory constraint or cost allocation and therefore do not demonstrate an underlying inefficiency in Scottish Water's forecast expenditure.
4. WICS notes that one historic carbon capture project may have an unrealistically low cost per hectare and suggests this could justify a greater challenge.	This observation reinforces the need for caution when applying benchmark data. Where source data may be affected by scope, allocation or data quality issues, it should not be relied upon to justify a material efficiency adjustment without transparent normalisation of the underlying data.
5. WICS has proposed an £8m challenge to the allowance.	The challenge does not identify or quantify any specific inefficiency within Scottish Water's proposed programme, nor does it demonstrate that equivalent outputs can be delivered at the reduced allowance. Scottish Water therefore requests that the £8m challenge is removed in full.

10.5 Scottish Water Proposed Reinstatement Value for Final Determination: +£8M

10.5.1 Scottish Water requests full reinstatement of the £8m carbon capture challenge in the Final Determination. The proposed challenge is based on high-level cost-per-hectare benchmarking that does not demonstrate a like-for-like comparison with Scottish Water's proposed programme. The analysis does not demonstrate comparability of scope, delivery environment, regulatory constraints or associated programme costs and does not identify a specific inefficiency in

Scottish Water's forecast expenditure. Furthermore, the challenge does not demonstrate that equivalent carbon capture outcomes can be delivered at the reduced allowance. Scottish Water therefore considers that the proposed £8m challenge is not supported by the available evidence and requests that the reduction is removed in full.

11 MA108 – PFI Returns AR3

11.1 Following confirmation of the progression of the West Central Bioresources project and the return of Daldowie WwTW into Scottish Water ownership, we have been able to review the AR3 requirements with an improved understanding of the operational context, asset condition and future investment need, ahead of the WCB project.

11.2 This more mature assessment has clarified the scope required at Daldowie and identified that the previously included replacement of the wet cake hopper is no longer required within the SR27 investment programme. As a result, Scottish Water has removed £17m from the Daldowie AR3 allocation, reflecting a more targeted view of the expenditure.

11.3 Further analysis of the allowances for PFI returns AR3 has identified a duplication of expenditure allowed for the termination payment at Ayrshire PFI of £5m. This has been removed from the associated allocation.

11.4 These two items combined represent a £22m reduction in AR3 required in SR27.

12 MA119 – Treated Water Storage (TWS)

12.1 WICS Cost Challenge Value: -£29M

Table 36: WICS Cost Challenge – MA119 Treated Water Storage

Treated water storage	Values (m)
Scottish Water forecast expenditure (2024-25 prices)	£290
Cost challenge (2024-25 prices)	-£29
Draft Determination allowance (2024-25 prices)	£261

12.2 WICS Cost Challenge Principle

12.2.1 WICS has applied a 10% catch-up efficiency challenge to this investment area, based on the following points:

- "Treated Water Storage: WICS challenge is that Scottish Water's unit costs for refurbishment and replacement are relatively high compared to those of companies in England and Wales. This is based on a benchmarking analysis undertaken by consultants WSP, who advised on a possible cost challenge of 12.5% to 25%."

12.3 Scottish Water Costing Evidence

12.3.1 The table below summarises the key unit costs underpinning the Management Approach:

Table 37: Costs Underpinning MA119

Cost per intervention	Value (£)	Commentary
Cost of replacement (per asset)	10,000,000	MA119
Cost of refurbishment (per asset)	1,000,000	MA119
Cost of repair (per asset)	350,000	MA119

12.3.2 The Treated Water Storage (TWS) investment is underpinned by a substantial body of historical project and programme cost data developed during the SR21 period.

12.3.3 Replacement costs have been derived from nine capital schemes delivered during the most recent investment period, providing a robust evidence base for the adopted unit rate.

12.3.4 Refurbishment costs are informed by actual intervention costs from 12 capital projects, covering both concrete and metal tank refurbishments.

12.3.5 The repair cost evidence is particularly extensive, drawing on 114 projects across a broad range of assets. The scale and diversity of this dataset provide a strong level of confidence in the forecast repair cost. The resulting average cost was £350,480, as shown in the extract below.

DV2 Lot 2

Tank Size	Average Costs	
	Total No. of Projects	LBE
<1Ml	56	£343,607
1-5Ml	43	£551,718
5-10Ml	7	£523,186
>10Ml	13	£977,679
Overall Averages	119	£498,639

Mackenzies

Tank Size	Average Costs	
	Total No. of Projects	LBE
<1Ml	15	£182,439
1-5Ml	5	£238,766
5-10Ml	1	£880,765
>10Ml	1	£332,769
Overall Averages	22	£233,816

Combined Rates

Tank Size	Average Costs	
	Total No. of Projects	LBE
<1Ml	71	£233,719
1-5Ml	48	£376,082
5-10Ml	8	£776,471
>10Ml	14	£594,763
Overall Averages	141	£350,480

Figure 2: Forecast Repair Cost

12.5.1 Overall, the MA119 cost estimate has been developed through Scottish Water's established investment planning and estimating processes. It is supported by historical delivery evidence, asset intelligence, project estimates and engineering judgement, providing a robust evidence base for the principal investment components of the programme.

12.6 Scottish Water Cost Challenge Response

12.6.1 Scottish Water has reviewed the cost challenge against the evidence provided in the Management Approach.

12.6.2 Scottish Water's response to the cost challenge is set out below:

Table 38: Scottish Water's Response

WICS Cost Challenge	Scottish Water Response
" Treated water storage, where Scottish Water's unit costs for refurbishment and replacement are relatively high compared to those of companies in England and Wales. This is based on a benchmarking analysis by our consultants, WSP, who advised on a possible cost challenge of 12.5% to 25%."	Scottish Water does not consider that the proposed 12.5% to 25% challenge is supported by the evidence presented. The TWS unit rates are grounded in a substantial body of recent Scottish Water delivery data: replacement costs are derived from nine capital schemes, refurbishment costs from 12 completed projects covering both concrete and metal tanks, and repair costs from 114 projects across a broad range of

WICS Cost Challenge	Scottish Water Response
	assets. This provides a robust and representative evidence base for the forecast costs.

12.7 Scottish Water Proposed reinstatement value for final determination: +£29M

12.7.1 Scottish Water requests that the £29m TWS cost challenge is fully reinstated in the Final Determination.

12.7.2 Scottish Water does not consider that the proposed 12.5% to 25% challenge is supported by the evidence presented. The TWS unit rates are underpinned by a substantial body of recent delivery evidence, comprising replacement costs from nine capital schemes, refurbishment costs from 12 completed projects covering both concrete and metal tanks, and repair costs from 114 projects across a broad range of assets. Scottish Water considers that this provides a robust and representative evidence base for the forecast costs.

12.7.3 The benchmarking evidence presented does not demonstrate that the England and Wales comparators are directly comparable in terms of asset size, construction type, scope of intervention, asset condition, site constraints, statutory requirements, price base or the allocation of associated costs. In the absence of this information, the conclusion that Scottish Water's unit costs are relatively high does not demonstrate an underlying inefficiency or provide a transparent basis for a challenge of between 12.5% and 25%.

12.7.4 The TWS cost estimates have been developed through Scottish Water's established investment planning and estimating processes, drawing on actual delivery costs, asset intelligence, project estimates and engineering judgement. The evidence presented by WICS does not provide a demonstrably like-for-like comparison or identify inefficiency within Scottish Water's unit rates. On the evidence available, Scottish Water therefore does not consider that a catch-up efficiency adjustment to the TWS allowance is justified and requests that the £29m challenge is removed in the Final Determination.

13 MA119 Chlorine Contact Tanks

13.1 WICS Cost Challenge Value: -£13M

Table 39: WICS Cost Challenge – MA119 Chlorine Contact Tanks

Chlorine contact tank management	Values (m)
Scottish Water forecast expenditure (2024-25 prices)	£134
Cost challenge (2024-25 prices)	-£13
Draft Determination allowance (2024-25 prices)	£120

13.2 WICS Cost Challenge Principle

13.2.1 WICS has applied a 10% catch-up efficiency challenge to this investment area, based on the following points:

- "The unit costs for refurbishment and replacement interventions are based on those for treated water storage, which are typically larger than those for chlorine contact tanks
- WSP considers that the upper end of unit costs for chlorine contact tanks is in line with industry standards for large, high-volume assets, which would be atypical for Scottish Water
- WSP advised that a cost challenge of 7% to 10% is applied due to Scottish Water's reliance on a condition-based methodology, the pace of delivery mandated by DWQR regulations, and the aforementioned size assumption in costing."

13.3 Scottish Water Costing Evidence

13.3.1 The table below summarises the key unit costs underpinning the Management Approach:

Table 40: Costs Underpinning MA119

Cost per intervention	Value (£)	Commentary
Cost of replacement (per asset)	6,300,000	Kettleton project costs
Cost of refurbishment (per asset)	1,000,000	Assumed cost based on TWS model (MA037)
Cost of repair (per asset)	350,000	Assumed cost based on TWS model (MA037)

13.3.2 The MA119 costing has been developed using Scottish Water's established investment planning and estimating processes and is supported by a

combination of historical delivery evidence, asset intelligence, project estimates and engineering judgement.

13.3.3 The replacement unit rate of £6.3M is informed by project-specific evidence from a major capital scheme and reflects the limited number of recent CCT replacement projects available across the Scottish Water asset base.

13.3.4 CCT refurbishment and repair costs are informed by the more established Treated Water Storage (TWS) programme, which provides a broader evidence base. The £1m refurbishment unit rate draws on historical TWS delivery data because relatively few CCT-specific interventions were completed in recent investment periods. In compiling the TWS dataset used to inform CCT costs, Scottish Water accounted for differences in typical asset size by excluding tanks larger than 10Ml. The resulting refurbishment unit rate is £1,033,740, based on an average tank size of 1.86Ml, as shown below:

Concrete tanks		
Project Description	**Indexed Cost (Oct 2022)**	**Capacity (Ml)**
TWS ARM SOUTH - Waterloo DSR (Inflation)	£1,526,024.34	16.22
TWS ARM West - Muirdykes CWT (Inflation)	£569,055.14	19.00
Craigbeath TWS Maintenance & Repairs	£1,182,790.50	3.96
Aberdeen Pitfodel TWS Repairs and Maintenance (Inflation)	£1,955,790.35	15.68
Garbethill DSR - TWS - Asset Repair - Rev 4	£645,669.74	16.86
TWS ARM South Hub - Clunie DSR R1	£473,838.37	1.74
Cow Hill DSR TWS Repairs and Maintenance (Inflation)	£1,543,696.59	3.64
Black Esk CWT Roof Replacement - Complete - Corrected Hierarchies-Inflated	£3,357,273.40	2.61
Metal Tanks		
Aberdeen Bluehill DSR TWS Repairs and Maintenance (Inflation)	£507,884.34	14.57
TWS ARM West - Auldhouseburn East DSR (Inflation)	£193,850.86	0.47
Appin DSR TWS Repairs and Maintenance (Inflation)	£309,478.17	0.53
Isleornsay DSR TWS Repairs and Maintenance (Inflation)	£175,252.65	0.08
AVERAGE:	£1,036,717.04	7.95
AVERAGE - CCT (under 10Ml):	£1,033,740.08	1.86

Figure 3: CCT refurbishment & repair cost summary

13.4 Scottish Water Cost Challenge Response

13.4.1 Scottish Water has reviewed the cost challenge against the evidence provided in the Management Approach and the findings set out in WSP's WICS Engineering Review of SR27 Business Plan. Section 9.3.3 of the report states: "The unit costs for replacement and for enabling works for isolation (bypass pipe) are derived from two named previous projects. All other units are based

on a Treated Water Storage (TWS) Model developed from a previous Management Approach (MA037)". This confirms that the CCT replacement unit rate is derived from CCT-specific project evidence and not from the TWS model. It is therefore inconsistent with the stated basis of the challenge that replacement intervention costs are based on treated water storage assets.

13.4.2 The WSP report further states: "it is observed that where unit costs are based on MA037 the values are the same for TWS and CCT. The capacity of Scottish Water's CCT assets should have been taken into consideration within the TWS Model. Therefore, it does not seem appropriate for the same values to be applied to both TWS and CCT as typically TWS are significantly larger." Scottish Water has addressed this point through a further review of the underlying dataset, as set out below.

13.4.3 Scottish Water's response to each element of the cost challenge is set out below:

Table 41: Scottish Water's Response

WICS Cost Challenge	Scottish Water Response
1." The unit costs for refurbishment and replacement interventions are based on those for treated water storage, which are typically larger than those for chlorine contact tanks"	The £6.3m replacement unit rate is not derived from TWS costs. It is based on a named CCT project and therefore represents CCT-specific replacement evidence. Furthermore, Scottish Water does not currently forecast any CCT replacement interventions within the SR27 period. As such, replacement costs are not expected to be a material driver of the MA119 expenditure forecast and do not provide a substantive basis for applying a programme-level efficiency challenge. The refurbishment and repair rates are informed by the TWS programme because recent CCT-specific delivery evidence is limited. To address differences in asset scale, Scottish Water excluded tanks larger than 10Ml from the dataset. The resulting refurbishment rate of £1,033,740 is based on an average tank size of 1.86Ml and is representative of the typical CCT size range.
2. "WSP considers that the upper end of unit costs for chlorine contact tanks is in line with industry standards for large, high-volume assets, which would be atypical for Scottish Water."	Scottish Water has explicitly accounted for asset capacity in the costing methodology by restricting the supporting TWS dataset to tanks below 10Ml. The average asset size within the revised dataset is 1.86Ml, materially below the 10Ml threshold. The resulting refurbishment unit rate remains consistent with the £1m allowance, demonstrating that the allowance is not driven by large, high-volume assets.
3. "WSP advised that a cost challenge of 7% to 10% is applied due to Scottish Water's reliance on a condition-based methodology,	The proposed challenge does not identify a quantified inefficiency arising from the condition-based methodology or the delivery requirements associated

the pace of delivery mandated by DWQR regulations, and the aforementioned size assumption in costing."	with DWQR regulation. The asset-size concern has been addressed through the revised dataset described above. Scottish Water therefore does not consider that these factors, individually or collectively, provide an evidenced basis for a 7% to 10% efficiency adjustment.

13.5 Scottish Water Proposed reinstatement value for final determination: +£13M

13.5.1 Scottish Water requests full reinstatement of the £13M CCT cost challenge in the Final Determination. Scottish Water does not currently forecast any CCT replacement interventions during the SR27 period and therefore replacement costs are not expected to be a material driver of expenditure within this Management Approach. The £6.3M replacement unit rate is based on CCT-specific project evidence and is not derived from TWS costs. For refurbishment and repair, Scottish Water has addressed WICS' concern regarding asset scale by reviewing the supporting TWS dataset and excluding tanks larger than 10Ml; the resulting refurbishment rate of £1,033,740 is based on an average asset size of 1.86Ml and remains consistent with the Business Plan allowance. The proposed 10% challenge does not identify or quantify an underlying inefficiency arising from Scottish Water's condition-based methodology, DWQR delivery requirements or revised size-adjusted cost evidence. Scottish Water therefore considers that the challenge is not supported by the available evidence and proposes that the full £13M is reinstated.

14 Daer Water Treatment Works Strategic Replacement

14.1 WICS Cost Challenge Value: -£13M

Table 42: WICS Cost Challenge - Daer Water Treatment Works Strategic Replacement

Daer water treatment works strategic replacement	Values (£m)
Scottish Water forecast expenditure	£31.4
Cost challenge	-£13.4
Draft Determination allowance	£18

14.2 WICS Cost Challenge Principle

14.2.1 WICS has challenged the Daer allowance on the basis that the proposed £31 million for optioneering and detailed design is higher than the 4% to 6% range it would normally expect for detailed design costs.

> *"In the case of the Daer water treatment works strategic replacement project, Scottish Water has explained that its aim is to complete the detailed design in the 2027-33 regulatory period, with construction in the next investment period. We are concerned that the cost proposed of £31 million for the initial assessment of options and detailed design is higher than industry norms for detailed design, which we would normally expect to be in the range 4-6% for estimated capital cost, which Scottish Water explains is around £250 million to £300 million. Based on £300 million, we consider an allowance of £18 million (6% of £300 million) to be more appropriate for optioneering and detailed design, resulting in a cost challenge of £13 million."*

14.2.2 The cost challenge therefore appears to apply a 6% allowance to the upper end of the estimated total capital cost range of £300 million, resulting in a proposed allowance of £18 million and a reduction of £13 million against Scottish Water's forecast expenditure.

14.3 Scottish Water Costing Evidence

14.3.1 The table below summarises the key costing evidence underpinning the Daer allowance:

Table 43: Key Costing Evidence - Daer Allowance

Costing evidence	Value / percentage	Commentary
Business Plan allowance	£31.4m	Allowance proposed for progressing Daer through detailed design, development and maturation activities in the 2027-33 regulatory period.
WICS Draft Determination allowance	£18m	Based on 6% of a £300m estimated capital cost.
Recent Scottish Water Gate 90 evidence	Average 10.36%; portfolio 9.41%	Review of nine major non-infrastructure SR21 projects with a combined delivered value of approximately £402m.

14.3.2 Scottish Water has reviewed recent major non-infrastructure projects completed through to Gate 90 approval during the SR21 regulatory period. The review assessed the proportion of total project expenditure incurred during project development and maturation activities prior to construction.

14.3.3 The review identified nine major projects with a combined delivered value of approximately £402 million. Across this portfolio, expenditure incurred through to Gate 90 represented an average of 10.36% of total project value, with an aggregated portfolio position of 9.41%.

14.3.4 Two comparable major water treatment projects provide more focused and relevant recent evidence of development costs incurred to Gate 90 maturity:

Table 44: Comparative Development Costs Incurred at Gate 90

Project	Total cost to Gate 90	LBE	Spend as % of LBE
5036720000 - SR21 ES Glenfarg WTW upgrade	£10,470,341	£119,649,036	8.75%
5045490000 - SR21 ES Black Esk WTW	£12,534,463	£120,286,145	10.42%

14.3.5 These projects demonstrate that actual expenditure incurred in developing major water treatment schemes through to Gate 90 approval exceeds the 4% to 6% range referenced in the Draft Determination. While these examples are of a lower total capital value than Daer, they represent Scottish Water's most relevant and recent outturn evidence for major treatment works development.

14.3.6 It is important to recognise that Scottish Water's Gate 90 expenditure represents whole-project development costs rather than design costs alone. These costs typically include:

- Full project development and design activities through to site commencement.
- Site investigations, surveys and technical studies.
- Specialist services, including land acquisition and utility diversions.
- Early contractor involvement and constructability development.
- Scottish Water project management and operational resource.
- Corporate overhead and support costs.
- All activities necessary to achieve Gate 90 approval and readiness for delivery.

14.4 Scottish Water Cost Challenge Response

14.4.1 Scottish Water has reviewed the cost challenge against the evidence provided for the Daer Strategic Replacement Programme. Scottish Water's response to the cost challenge is set out below:

Table 45: Scottish Water's Response

WICS Cost Challenge	Scottish Water Response
WICS considers that an allowance of £18 million, based on 6% of a £300 million estimated capital cost, is more appropriate for optioneering and detailed design, resulting in a £13 million cost challenge.	Scottish Water does not consider the proposed £13 million challenge to be based on a like-for-like comparison. The Daer allowance is intended to progress the project to Gate 90 maturity and construction readiness, and therefore includes a broader scope than detailed design alone. Recent Scottish Water delivery evidence for major treatment works shows development costs to Gate 90 of 8.75% and 10.42% of LBE for Glenfarg WTW and Black Esk WTW respectively, with the wider SR21 portfolio showing an average of 10.36% and an aggregated position of 9.41%. This evidence supports the reasonableness of the current allowance pending further project definition and cost refinement.

14.5 Scottish Water Proposed Reinstatement Value for Final Determination: +£6M

14.5.1 Scottish Water recognises that Daer is materially larger than the recent comparator schemes and may therefore offer economies of scale. However, relevant water treatment project evidence shows development and maturation costs to Gate 90 of 8.75% to 10.42%.

14.5.2 The Draft Determination's 6% allowance is not supported by comparable evidence and does not reflect the full scope required to achieve Gate 90 maturity and construction readiness, which extends materially beyond detailed design.

14.5.3 Comparable historical evidence is necessarily limited because Scottish Water has not delivered a water treatment replacement of Daer's scale and strategic complexity in recent regulatory periods. Taking a pragmatic approach, Scottish Water proposes an 8% allowance, recognising potential scale efficiencies while remaining consistent with the best available delivery evidence. Applied to WICS's £300 million capital value, this gives an allowance of £24 million.

14.5.4 Scottish Water therefore requests reinstatement of £6 million in the Final Determination. This is a balanced, evidence-based adjustment that recognises potential economies of scale without applying a detailed-design benchmark to the materially broader Gate 90 development scope.

15 Allanfearn STC NH711475 - Replacement of Digester 1 & 2

15.1 WICS Cost Challenge Value: -£19.5M

Table 46: WICS Cost Challenge - Allanfearn STC NH711475 - Replacement of Digester 1 & 2

ALLANFEARN STC NH711475 - REPLACEMENT OF DIGESTER 1 AND 2:	Values (£m)
Scottish Water forecast expenditure	£19.5
Cost challenge	-£19.5
Draft Determination allowance	£0

15.2 WICS Cost Challenge Principle

15.2.1 WICS has removed the £19.5m allowance for the Allanfearn STC Digester 1 and 2 Replacement project from the Draft Determination. Following clarification from Scottish Water, WICS concluded that the scope is now incorporated within the wider Allanfearn WwTW Treatment and Bioresources project and therefore removal of the standalone allowance is appropriate to avoid double-counting.

15.3 Scottish Water Evidence

15.3.1 Scottish Water has reviewed the relationship between the standalone Allanfearn STC Digester 1 and 2 Replacement project and the wider Allanfearn WwTW Treatment and Bioresources project.

15.3.2 This review confirmed that replacement of Digesters 1 and 2 is fully incorporated within the scope of the wider Allanfearn WwTW Treatment and Bioresources project and is therefore no longer required as a separate investment line within SRC27.

15.3.3 The standalone project has subsequently been reduced to reflect actual expenditure incurred and remaining activities associated with project closure.

15.4 Scottish Water Position

15.4.1 Scottish Water agrees with WICS' assessment that the standalone allowance for replacement of Digesters 1 and 2 should be removed from the Final Determination to avoid double-counting. Scottish Water's response is set out below:

Table 47: Scottish Water's Response

WICS Cost Challenge	Scottish Water Response
ALLANFEARN STC NH711475 - REPLACEMENT OF DIGESTER 1 AND 2: WICS queried the lack of evidence to substantiate the £24 million cost estimation for this project (total expenditure over SRC21 and SRC27). Scottish Water responded that this project would now be closed and restarted at Gate 30 and included in a wider Allanfearn wastewater treatment works project, we assume this is the £56 million Allanfearn WwTW - Treatment and bioresource, project reference 5363112312.	Scottish Water confirms that the replacement of Digesters 1 and 2 is now incorporated within the wider Allanfearn WwTW Treatment and Bioresources project. The standalone Digester 1 and 2 Replacement project has therefore been reduced to reflect actual expenditure incurred and the remaining activities required to close the project.
Therefore, our understanding is that the budget of £19.5 million for this project in SRC27 is no longer needed and can be removed from the final business plan as the replacement of the digesters is included in the Allanfearn WwTW - Treatment and bioresource, project reference 5363112312.	Scottish Water agrees that the £19.5m allowance should be removed from the Final Business Plan as the scope is fully accounted for within the wider Allanfearn WwTW Treatment and Bioresources project. Removal of the standalone allowance avoids duplication of investment funding.

15.5 Scottish Water Proposed Reinstatement Value for Final Determination: +£0M

15.5.1 Scottish Water agrees with WICS' removal of the £19.5m allowance relating to project 5278530000 – Allanfearn STC NH711475 Replacement of Digester 1 and 2.

15.5.2 The scope associated with replacement of Digesters 1 and 2 is now incorporated within the wider Allanfearn WwTW Treatment and Bioresources project and is therefore no longer required as a standalone investment within SRC27.

15.5.3 Retaining both allowances would result in double-counting of the same investment scope. Scottish Water has therefore removed the standalone project allowance from the Final Business Plan and agrees with WICS' corresponding reduction in the Draft Determination. No reinstatement is sought in the Final Determination.

16 Pathhead WwTW – Capital Maintenance

16.1 WICS Cost Challenge Value: -£6M

Table 48: WICS Cost Challenge - Pathhead WwTW - Capital Maintenance

Pathhead WwTW – Capital Maintenance	Values (m)
Scottish Water forecast expenditure (2024-25 prices)	£8
Value within 2027-33 regulatory period	£6
Cost challenge (2024-25 prices)	-£6
Draft Determination allowance (2024-25 prices)	£0

16.2 WICS Cost Challenge Principle

16.2.1 WICS has disallowed the proposed investment at Pathhead Wastewater Treatment Works on the following basis:

- Pathhead wastewater treatment works at a cost of £8 million, of which over £6 million is in the 2027-33 regulatory period. In this case, Scottish Water has not provided sufficient evidence to support the need for investment, the selection of the proposed investment option, nor the adequacy of the capital cost estimate. Therefore, WICS considers that the evidential threshold for investment in Pathhead wastewater treatment works has not been met and, as such, we have disallowed this investment in our Draft Determination
- Although Scottish Water confirmed that the primary need at this project is asset maintenance, not growth as presented in the original evidence, we do not see evidence that the works is in poor condition (due to aged assets) or that there are recorded non-compliance events;
- There is only limited information provided regarding the incapability of the existing assets and what effect these incapabilities have on the effectiveness of the treatment process. There is no evidence of non-compliance;
- There is no assessment of the needs relative to risk reduction that will be achieved by any of the short-listed options;
- There is only limited evidence given for the selection of the recommended option from the short-listed options; and
- There is no comparison of risk reduction or cost against a base case option.

16.3 Scottish Water Evidence Base

16.3.1 Scottish Water has reviewed WICS' assessment and notes that the challenge relates primarily to the sufficiency of the Needs and Options evidence presented during the regulatory review process rather than the underlying requirement for investment.

16.3.2 Pathhead WwTW is proposed as a capital maintenance investment to address deterioration of existing secondary treatment assets. The supporting project development work included condition assessments, flow and load investigations, option appraisal, value management reviews, economic appraisal and independent assurance activities. The condition assessment identified deterioration of the existing biofiltration infrastructure, including stonework deterioration, damaged coping stones, deteriorated underdrain systems, silted channels and deterioration of associated civil structures

16.3.3 Scottish Water also completed an options appraisal and Net Present Cost Comparison (NPCC) assessment which considered intervention options against a Business-as-Usual baseline over a 60-year planning period. The assessment considered capital expenditure, operational expenditure, future replacement requirements and carbon impacts in support of selection of the preferred option.

16.3.4 The detailed evidence supporting the investment need, condition assessment findings, options appraisal process, assessment of intervention benefits and economic appraisal is provided in the supplementary information for Pathhead WwTW Need and Options Response.

16.4 Scottish Water Response

16.4.1 Scottish Water does not agree that the Needs and Options assessment criteria have not been met. The challenge appears to place significant weight on the absence of historical non-compliance events. However, the absence of historic regulatory non-compliance should not be interpreted as evidence of an absence of investment need. Capital maintenance investment is intended to address asset deterioration and mitigate future service and compliance risks before failures occur. The supporting evidence demonstrates deterioration within the existing secondary treatment assets and provides the basis for intervention before asset condition results in service or compliance failures. Scottish Water’s response to each element is set out below:

Table 49: Scottish Water's Response

WICS Challenge	Scottish Water Response
1. Although Scottish Water confirmed that the primary need is asset maintenance, there is insufficient evidence that the works is in poor condition or that aged assets require replacement.	The investment is supported by detailed condition assessment evidence which identified deterioration of the existing biofilters and associated treatment infrastructure. This includes deterioration of stonework, coping stones, underdrain systems, collection channels and associated structures. The proposed investment addresses identified asset condition risks and long-term asset sustainability. Full condition evidence is included within the supplementary information on Pathhead.
2. Limited information has been provided regarding asset incapability and the impact on treatment performance. There is no evidence of non-compliance.	Scottish Water agrees that the investment is not driven by historic regulatory non-compliance. The project is proposed as a proactive capital maintenance intervention to address deterioration of critical treatment assets before service reliability and operational resilience are compromised. A demonstrated history of regulatory non-compliance should not be regarded as a prerequisite for capital maintenance investment. Such investment is specifically intended to address deterioration and mitigate future service, operational and compliance risks before asset failure or regulatory non-compliance occurs.
3. There is no assessment of need relative to risk reduction delivered by the shortlisted options.	The options development process considered the ability of alternative interventions to address the identified asset condition risks and improve long-term operational resilience. The preferred option was selected because it provides a sustainable long-term solution to the deterioration identified within the secondary treatment assets. Additional information on risk reduction and intervention outcomes is provided within Pathhead WWTW supplementary information.
4. There is limited evidence supporting selection of the preferred option.	The shortlisted options were developed specifically to address the risks identified through the condition assessment process. These included deterioration of biofiltration assets, deterioration of associated civil structures, increasing maintenance intervention requirements and reducing long-term operational resilience. The preferred option was selected because it most effectively addressed the identified asset condition risks while providing a sustainable long-term treatment solution. Further information on risk reduction and option benefits is provided within Pathhead WWTW supplementary information.
5. There is no comparison of risk reduction or cost against a base case option.	Scottish Water undertook an NPCC assessment comparing the preferred capital maintenance intervention with a Business-as-Usual option. The assessment considered whole-life capital expenditure, operating expenditure, future asset replacement requirements and carbon impacts over a 60-year appraisal period. Pathhead WWTW supplementary

WICS Challenge	Scottish Water Response
	information contains further information on the appraisal process and findings.
6. Insufficient information has been provided to enable assessment of the cost estimate.	The Pathhead cost estimate reflected in the Business Plan is relatively mature and has been market-tested through Scottish Water's Delivery Vehicle 1 Non-Infrastructure delivery partner. The estimate is classified as an AACE International Class 3 estimate, representing a semi-detailed level of estimating suitable for budget authorisation and project cost control, and is consistent with Gate 70 Latest Best Estimate (LBE) maturity. The estimate reflects the requirements and constraints associated with delivering works within a live operational wastewater treatment works, including maintaining continuity of service and achieving regulatory compliance throughout construction. The estimate is supported by established project controls, including a quantified cost risk register, providing an appropriate level of confidence in forecast expenditure. In addition, the project cost estimate has been fully developed within Scottish Water's corporate estimating system (BES), ensuring consistency with established estimating governance, assurance and cost build-up methodologies. This should be considered alongside the broader Needs and Options evidence contained within Pathhead WWTW supplementary information.

16.5 Scottish Water Proposed Reinstatement Value for Final Determination: +£6M

16.5.1 Scottish Water requests reinstatement of the Pathhead WwTW Capital Maintenance allowance in the Final Determination.

16.5.2 The challenge is principally based on WICS' view that the Needs and Options assessment criteria have not been sufficiently evidenced. Scottish Water considers that the supporting project development work demonstrates:

- a clear capital maintenance need arising from deterioration of existing secondary treatment assets;
- a structured assessment of intervention options;
- consideration of a Business-as-Usual baseline;
- assessment of whole-life costs through NPCC appraisal; and
- a justified preferred option targeting identified asset condition risks.

16.5.3 The detailed evidence supporting investment need, asset condition, option selection, risk reduction and costs are provided within the document ‘Pathhead

WWTW Supplementary Information'. Collectively, this evidence demonstrates that the investment has been subject to a structured needs assessment, options appraisal and economic evaluation process consistent with Scottish Water's established investment governance framework. Scottish Water therefore considers that the evidential threshold for investment has been met and that removal of the full £6m allowance is not supported by the available evidence. The full Pathhead WwTW allowance should be reinstated within the Final Determination.

16.5.4 Further information is available in supplementary information: *Pathhead WwTW WIC Response Paper Costing Information*

17 Infrastructure Investment

17.1 Scottish Water accepts the £27 million reduction in Part 3 growth investment, from £123 million to £96 million, reflecting the revised long-term forecast of £16 million per annum. Further information is available in Annex 2: Specific Modelling and Funding Adjustments.

18 Service Relocation

18.1 The SR27 Figure submitted by Scottish Water was based on a run rate from previous investment periods, with reductions already made to cover the reduced investment profile experienced in SR21. That was done by not including an allowance for inflation over the whole SR27 and a further reduction of circa £10m in overall projected spend (from our first draft) in addition to that to cover the reduced SR21 investment figure.

18.2 It should be noted that this is a funding allowance to ensure that Scottish Water complies with its legal obligations under the NRWSA, 1991 and the Diversions Code Of Practice that sits under that legislation. It is not based on actual projects already committed as the programme is determined by Roads & Rail Authorities across Scotland and projects that they intend to promote to Scottish Water. It is a reactive programme that Scottish Water has no control over the requirements or deadlines but has a legal requirement to comply with the NRSWA Diversions COP.

18.3 Regarding the SR21 period, this was affected significantly by Covid 19. In 2020 when the lockdown was declared, all public sector site works were stopped. However, the planning for new projects starting on site for both Transport Scotland and Local Authority Councils was delayed further. It was not until around 2023 that new site projects were generated by the Roads Authorities to their pre-Covid levels.

18.4 Further reductions in SR21 spend profile occurred when the A9, of which some stages had already started on site in SR15, was stopped while the Scottish Government undertook a review of the project as whole. The net outcome of that was that the projects that had not been progressed in SR21 but were expected to be did not start up again until the 2024 after the ministerial announcement in the Scottish Parliament. The original deadline for the A9 prior to 2021 was completion in 2026 (a circa 10 year programme). The revised deadline is now confirmed as 2035, for Scottish Water most of the diversions works should be complete around 2033.

18.5 A96 which had been expected to have most of its investment completed by 2030 was stopped completely after a government review. That further impacted the run rate as the section at Fochabers alone was expected to include £10m+ of diversionary works.

18.6 In addition to the above, Scottish Water have during this year prepared various C3 and C4 Design and budget costs to Transport Scotland and Councils across

Scotland. The following projects have a high likelihood or progressing during SR27:

- East Airdrie Link Road C3 value - £16.5m
- Gruggies Burn C3 value - £4.5m
- A9 Dalraddy to Slochd – Potentially £8m-£10m Mainly due to the Aviemore Abstraction Wellfield
- Remaining A9 Projects - £4m forecast Allowance for remaining A9 diversions

18.7 Therefore, should all of these projects commence in SR27, £33-35m approximately could utilised by these projects. We do not have visibility of future projects for this period as Councils, Transport Scotland, Bear Scotland, AMEY, Network Rail do not give us notice of projected works outside of the COP requirements.

18.8 In summary, the SR27 allowance has been developed as a prudent funding provision based on historic run rates, adjusted to reflect the reduced investment profile experienced during SR21. The allowance is necessary to enable Scottish Water to meet its statutory obligations under NRSWA 1991 and the Diversions Code of Practice, despite the programme being driven by Roads and Rail Authorities rather than by Scottish Water.

18.9 The lower level of SR21 expenditure was influenced by exceptional external factors, including the impact of Covid-19 on public sector works, delays to Transport Scotland and Local Authority programmes, and the suspension and rescheduling of major projects such as the A9 and A96. These factors should not be taken as an indication of reduced future demand, as several significant projects already have C3 values or forecast allowances that could draw substantially on the SR27 provision.

18.10 Based on currently visible schemes alone, potential SR27 diversionary works could account for approximately £33m to £35m, with further unknown demand likely to arise as Roads Authorities, Transport Scotland, BEAR Scotland, AMEY and Network Rail bring forward additional projects within the Code of Practice requirements. The SR27 allowance is therefore required to ensure Scottish Water can respond to statutory diversionary obligations in a timely and compliant manner.

18.11 As the funding requirement requested now is an allowance and is not fully committed projects, this can be reduced as the investment period progresses if the run rate falls behind. Please also note that should Scottish Water fail to fund this adequately, they may delay significant roads and rail projects across Scotland. That failure could result in Scottish Water being reported to the Roads Commissioner for Scotland who can levy significant fines for failure to comply the legislation.

19 Additional Review of Broader Aberdeen Strategy (inc. Persley and Nigg WwTW investment)

19.1 Further information about the need for investment at Nigg and Persley as part of an Aberdeen Strategy is available in Annex 4a – Capital Investment Evidence.

19.2 Following receipt of the Draft Determination a review was undertaken to understand the costing requirements for the two projects (c£19m each in the Final Business Plan).

19.3 Revised funding of £28M for the development and / or delivery of aspects of the broader Aberdeen Strategy, consisting of:

- System Plan studies and development £2M
- Option development to G70 following outcomes of System Planning £15M (10% of assumed £150M build)
- No Regrets / Interim Upgrades – Persley Primary Tanks £9M, Resolve Nigg power constraints £2M

19.4 This represents a £10m reduction in the combined allocation (£38m) for these needs.

Annex 4c
Asset Repair, Refurbish and Replace (AR3) Outputs

Contents

1. AR3 Output Requirements Summary 3
1.1 Purpose 3
1.2 Requirement to Provide AR3 Outputs 3
1.3 Why the Current View Needs to Change 4
1.4 Next Steps 5
2 The Six Options Discussed 6
2.1 Option 2a for the Draft Determination Response 7
2.2 Under Option 2(a): 7
3 Option 3 for the Delivery Plan 9
Appendix A: Option 2a: AR3 Output Table (Indicative view) 10
Summary of AR3 Outputs for Option 2a 10

1 AR3 Output Requirements Summary

1.1 Purpose

1.1.1 Paragraph 5.4.10 of the Draft Determination highlights the requirement to provide clearer AR3 output information for inspections, repair, refurbishment and replacement activity.

1.1.2 This annex outlines the five reporting options discussed with WICS during July 2026 to improve the reporting granularity and completeness of AR3 outputs. Through discussion with WICS during July 26, Option 1 and Option 5 have been discounted for SR27 Business Plan and reporting.

1.1.3 This Annex sets out the proposed approach:

- Option 2 / 2a for the Draft Determination response.
- Option 3 for the SR27 Delivery Plan.
- Option 4 as a potential maturity route where future systems and data allow more granular reporting.

1.2 Requirement to Provide AR3 Outputs

1.2.1 WICS is seeking a clearer explanation of what the AR3 programme will deliver for the proposed SR27 investment (Circa £5bn). The existing Business Plan outputs were largely based on blended replacement outputs and do not fully show the wider range of asset interventions expected through the programme. This blended approach was adopted for business planning purposes to fit into the WICS Business Plan templates – but it tends to grossly under-represent the range and numbers of outputs for this significant investment area.

1.2.2 The required output view needs to separate, or at least make visible, The four core intervention types:

- **Inspection**: activity to assess assets and inform asset condition and interventions.
- **Repair**: fixing an asset so it can continue to operate, including replacement of component parts where the asset remains in service
- **Refurbishment**: renovation or overhaul to bring an asset back to workable condition and extend its expected life.
- **Replacement**: replacement of an asset, equipment, unit, process, site or infrastructure section where repair or refurbishment is not appropriate or economic.

1.2.3 Note: this excludes operational activities (routine inspections, operational maintenance (greasing etc), cleaning, Health and Safety checks and calibration) which are covered by our operational expenditure.

1.2.4 As a minimum, it is important to at least separate out inspections and minor interventions as these can materially change the number of reported outputs. A single blended output total can therefore misrepresent the scale and nature of work being funded.

1.3 Why the Current View Needs to Change

1.3.1 Current Final Business Plan Table X outputs focused mainly on replacement-style outputs and were calculated using a blended unit rate and applied to the refurbishment (reservoirs, offices and tanks) or replacement investment.

1.3.2 Management Approach (MA) documents contain broader intervention information, including inspections, repair, refurbishment and replacement as well as unit costs at sub asset level.

1.3.3 The unconstrained MA model outputs can be significantly higher than the constrained Final Business Plan outputs.

1.3.4 Some outputs combine different units, such as kilometres, sites, interventions or asset counts.

1.3.5 Within our project system (P3M) an output is recorded at project level, while the proposed AR3 approach may need outputs at equipment, unit, asset category level. i.e. one project = one output such as a water quality improvement whereas an SR27 AR3 project may now deliver several asset replacements as well as some repairs or refurbishments.

1.3.6 Scottish Water does not currently capture all inspection and repair outputs in one consistent system.

1.4 Next Steps

1.4.1 It has been agreed to provide a high level timeline for a phased implementation / maturity plan. The plan is to begin outlining a 2–3 year roadmap showing how reporting could evolve from:

- Option 2 / 2a for the DD Response by 1 September 2026; to
- Option 3 for the Delivery Plan by March 2027; to
- Option 4 for improvement by Year 2 / 3 of the SR27 period.

1.4.2 Each option builds on the previous option by providing increased granularity but using a common set of building blocks and hence is additive rather than creating abortive work / reporting blocks.

1.4.3 The detailed plan will consider annual return implementation, system changes, behavioural changes, data collection and reporting maturity. It is proposed to provide this alongside the Further Capability Improvements for SR27 plan outlined in Technical Appendix 008 - Investment Planning that is being refreshed for the Delivery Plan submission.

2 The Six Options Discussed

Table 1: Summary of six options

Option	Description	Main Benefit	Main Limitation
1. Total outputs by MA	Reports a single total IRRR output by Management Approach.	Simple and provides a higher-level view of total intervention volume.	Mixes inspections with repair, refurbishment and replacement, so the total can be misleading and not transparent.
2. Separate Inspections and total RRR	Reports inspections separately from a grouped repair/ refurbishment / replacement total. Infrastructure interventions are split from replacement and several MAs with different output units (i.e. km vs number of asset interventions) are disaggregated.	Gives a clearer minimum view for Draft Determination and avoids inspections distorting RRR outputs.	Does not separate repair, refurbishment and replacement individually across all MAs.
2a. Three categories: Inspection, Replacement, Repair and refurb	As per Option 2 but also splits RRR into 2 sub-categories of 'Replacement' and 'Repair & Refurbishment'	As per Option 2 with additional granularity by disaggregating the Replacement activity	
3. Split out IRRR outputs	Reports inspections, repair, refurbishment and replacement separately by Management Approach.	Gives a more meaningful view of what the investment delivers and provides more granularly that could be used for Delivery Plan reporting (Table 4c).	The civil/MEICA assets are shown in the same output. Outputs would not be split into Delivery Plan Table 3a asset and sub asset categories.
4. Split IRRR by civil, MEICA and infrastructure at need level	Further breaks outputs down by Need ID and asset type.	Supports more granular reporting by asset category and sub-asset category.	Requires significant system, process and behaviour change before reliable actuals can be reported.
5. Model output on constrained investment	Uses asset degradation models run directly on the constrained investment.	Theoretically the strongest asset-level view as outputs would be based on model outputs.	Not currently available across a number of asset categories. Work is underway to increase the asset model coverage.

2.1 Option 2a for the Draft Determination Response

2.1.1 At a meeting with WICS on 05 August 2026, it was agreed that Option 2 would be an acceptable improvement to reflect the AR3 investment outputs.

2.1.2 SW indicated that it would continue to develop the analysis by further disaggregating the outputs into 2 sub-categories of 'Replacement' and 'Repair & Refurbishment' (known as Option 2a) and provide these with the DD Response if time allowed. Option 2a has been achieved and is included within Appendix A.

2.1.3 The outputs should be considered indicative at this stage as we develop the output methodology and further assurance activities for the Delivery Plan. They can be considered directionally correct to how the typical numbers we expect to deliver in SR27.

2.1.4 Blended unit rates should not be inferred or derived for benchmarking purposes as in some cases they average out MEICA and civil costs. As we improve our corporate systems to capture and compare data in these newly agreed blocks, our projections and unit rate comparisons will improve.

2.2 Under Option 2(a):

2.2.1 Inspections are reported separately.

- Inspection outputs use blended inspection unit rates from that MA.

2.2.2 Repair & refurbishment are grouped as one R&R total.

- Repair & Refurbishment outputs use the same broad apportionment logic (assess total unconstrained total R&R outputs and investment from the MAV2 projections and apportion total R&R outputs based on the constrained investment in SR27 FBP).

2.2.3 Replacement outputs are shown separately

- Replacement outputs are calculated in a similar way to repair & refurbish using a blended unit rate and unconstrained outputs and apportioned based on the constrained investment

2.2.4 MAs with multiple output units (e.g. length kms and interventions / numbers) are manually collated and reported.

2.2.5 MAs with infrastructure outputs have been disaggregated into repair interventions (number) and replacement length (metres /KM) to give better visibility of replacement rates.

2.2.6 This approach responds to concerns that the Business Plan understated or obscured the volume of AR3 activity. It shows that inspections are different from physical interventions and avoids counting an inspection as equivalent to a repair or replacement.

3 Option 3 for the Delivery Plan

3.1 Option 3 is proposed for the Delivery Plan because it provides a more transparent reporting structure while remaining more realistic than Option 4 to deliver in the short term. This will require a revision to the structure of the draft Delivery Plan tables (work underway).

3.2 Depending on the Final Determination, the outputs may need to be reviewed if there is an impact on investment and so the indicative outputs provided in this response may change.

3.3 Option 3 Methodology:

- Outputs are separated into **inspection, repair, refurbishment and replacement**.
- Outputs are reported by Management Approach and disaggregated if output units are different (e.g. number vs length).
- The method builds from the same output allocation as Option 2.
- Repair, refurbishment and replacement outputs are calculated using the relevant repair or refurbish or replacement blended unit rate and applied to the relevant investment category split.
- The approach gives a clearer view of the type of work delivered through the AR3 programme. As we work through this, it may mean investment in the delivery plan is adjusted (within inspection, repair, refurbishment and replacement) to better reflect the anticipated outputs.

3.4 Option 3 is suitable as a Delivery Plan approach because it improves transparency without requiring full asset-category, sub-asset, civil and MEICA reporting from year one. More detailed disaggregation of outputs will require an assessment of the changes to current systems, behaviours and processes to ensure the information collected can be meaningful and correctly assigned.

3.5 Relationship to Option 4: Option 4 remains the longer-term maturity route. It will be needed if reporting at asset category or sub-asset category level, particularly where civil, MEICA and infrastructure outputs need to be rolled up into Delivery Plan Table 3a or Table 4b.

3.6 An assessment is underway to see how Option 4 can be treated as a phased improvement rather than an immediate Delivery Plan requirement due to:

- clearer definitions and rules for counting outputs (a shift from 1 output per project to equipment and unit level outputs);
- changes to P3M, delivery systems, asset registers and Maximo interfaces;
- improved capture of repairs and inspection outputs;
- training and behaviour change for project and delivery teams;
- shadow reporting before formal use.

Appendix A: Option 2a: AR3 Output Table (Indicative view)

The following tables have been prepared using the Option 2a approach described above where the outputs are disaggregated into 3 categories: Inspections, Repair & Refurb, and Replacement.

The tables have also been grouped into their service areas:

- Water Quality
- Water Continuity
- Water Environment
- Wastewater Flows
- Support Services

Summary of AR3 Outputs for Option 2a

Table 2: Water Quality AR3 outputs

MA ID	Management Approach Name	Primary output (consolidated)	Inspections Outputs	Repair & Refurb Outputs	Replacement Outputs
MA006	WT Capability Improvement	No. of water filter units maintained (sites)			2
MA016	Water Quality - Network	Length of potable water mains cleaned (km)		8,441	
		Length of potable water mains replaced (where cleaning is insufficient) (km)			24
MA022	Water SCADA, PLC & HMI	No. of water SCADA, HMI, PLC asset interventions	2,164	379	501
MA033	Water Filtration	No. of water filter units maintained		535	1,928
MA052	WTW Sludge & Washwater Handling	No. of WWTW secondary treatment interventions (MEICA & Civils)		310	16
MA081	Sample Points	No. of water sample point interventions		1,537	397
MA089	Water Security	No. of water security interventions	2,352	1,772	226
MA093	WTW - Civils & Process Structures	No. of WTW structure interventions	4,817	205	
MA094	WTW - Process Stages Mechanical & Electrical	No. of WTW process equipment interventions		2,128	4,506
MA095	WTW Water Quality Instrumentation	No. of WTW instrumentation interventions		39,495	4,913
MA114	Water Treatment, Chemical Dosing and Storage	No. of water chemical storage and dosing interventions	4,409	3,207	137

Table 3: Water Continuity AR3 outputs

MA ID	Management Approach Name	Primary output (consolidated)	Inspections Outputs	Repair & Refurb Outputs	Replacement Outputs
MA004	Reservoir Safety	No. of reservoir interests of Safety interventions	1,675	3,968	
		No. of reservoir drawdowns		5	
MA018	Ironworks (water and wastewater)	No. of street furniture interventions (water)		22,784	
MA028	Water Catchment Management	No. of water catchments managed	216	5	
MA044	Telemetry (Water & Wastewater)	No. of telemetry interventions (water)	770	672	276
MA054	Network Modelling - (water and wastewater)	No. of network models maintained (water)		301	
MA058	Water Pumping Stations	No. of water pump interventions (raw&treated water-MEICA & Civil)	4,628	2,292	206
MA060	Distribution Infrastructure - Network Valves	No. of water strategic network valve interventions	65,297	15,550	298
MA068	Statutory & Planned Maintenance (W&WW)	No. of statutory or legislative compliance interventions (water)		72,371	
MA073	Distribution Infrastructure - Metering and Flow Monitoring	No. of water leakage management equipment interventions	1,009	2,340	934
MA080	Boreholes and Springs	No. of borehole or spring interventions (MEICA and Civils)	302	74	0
MA091	High Voltage Assets (Water and Wastewater)	No. of high voltage system interventions (water)	324	228	24
MA099	Water Demand Management*	No. of intervention to reduce water losses	TBC		
MA111	Water Distribution mains	No. of distribution mains interventions		47,080	
		Length of potable water mains replacement (Km)			1,260
		Length of mains with pressure management intervention (Km)			[20.5]
		No. of properties where persistent low pressure is resolved			40
MA115	Water Pipe bridges	No. of water pipe bridge interventions	546	123	8
MA116	Water - Strategic Infrastructure	Length of water aqueducts, tunnel interventions Km	85	6	
		No. of sub-sea main / pipe bridge interventions	11	3	
		Length of water trunk and raw water mains (Km)	257	3.8	15.5
		No. of properties with reduced risk of flooding from mains*	[59]	[255]	[15]
MA117	Raw Water (Intake and Storage)	No. of raw water intake and storage interventions	151	135	6
MA118	Water Low Voltage Electrical Systems (MCC)	No of water low voltage or MCC interventions	417	363	73
		No. of standby power equipment interventions	33	138	35
MA119	Treated Water Storage and Chlorine Contact Tanks and Pipes	No. of water TWS, CCT,CCP Interventions	873	716	7
MA120	Site Buildings & Asset Access (W&WW)	No. of operational building or access interventions (water)	2,911	1,359	24

Table 4: Water Environment AR3 outputs

MA ID	Management Approach Name	Primary output (consolidated)	Inspections Outputs	Repair & Refurb Outputs	Replacement Outputs
MA011	Wastewater Motor Control Centres	No. of wastewater Motor Control Centre interventions (network and treatment)	479	1,233	28
MA013	Wastewater Control Systems (SCADA)	No. of SCADA, HMI, PLC asset interventions (wastewater)	58	149	145
MA017	Wastewater Treatment Works - Inlet Works	No. of WWTW inlet works asset interventions (MEICA and civils)		5,373	475
MA021	Management of Wastewater Temporary Process Units	No. of WWTW sites with temporary process unit interventions		286	486
MA024	Wastewater Bioresource Treatment and De-watering Centres	No. of WWTW sludge treatment centre interventions (MEICA and Civils)	185	1,542	631
MA035	Wastewater Outfalls	Length of wastewater outfalls interventions (meters)	36	15	141
MA036	Wastewater Screw Pumps	No. of wastewater screw pumps intervention (network and treatment)	58	82	12
MA039	Combined Sewer Overflows (CSOs)	No. of Combined Storm Overflow (CSO) screen interventions (MEICA and Civils)	61	347	12
MA042	Wastewater Treatment Works - Primary Treatment	No. of WWTW primary treatment interventions (MEICA and Civils)		1,909	147
MA043	Wastewater Treatment Works - Secondary & Tertiary Treatment	No. of WWTW secondary treatment interventions (MEICA and Civils)	163	6,945	1,689
MA044	Telemetry (Water & Wastewater)	No. of telemetry interventions (wastewater)	326	570	319
MA049	Wastewater Odour Control Equipment	No. of WWTW odour asset interventions	28	268	39
MA057	Wastewater Treatment Works - Ancillaries	No. of WWTW treatment ancillaries interventions	929	6,097	2,843
MA063	Water Resources Environmental Monitoring & Compliance	No. of abstraction and compensation monitoring equipment interventions		347	193
MA068	Statutory & Planned Maintenance (water and wastewater)	No. of statutory or legislative compliance interventions (wastewater)		124,804	
MA091	High Voltage Assets (Water and Wastewater)	No. of high voltage system interventions (wastewater)	398	273	32
MA108	PFI (Private Finance Initiative)*	No. of interventions MEICA	TBC	TBC	TBC
		No. of interventions CIVILs			
MA120	Site Buildings & Asset Access (Water & Wastewater)	No. of operational building or access interventions (wastewater)	2,429	2,901	23

Table 5: Wastewater flows AR3 outputs

MA ID	Management Approach Name	Primary output (consolidated)	Inspections Outputs	Repair & Refurb Outputs	Replacement Outputs
MA003	Wastewater Pipe bridges and Overland Sewers	No. of wastewater pipe bridge interventions	684	296	55
MA012	Wastewater Pumping Mains	No. of wastewater pumping main interventions		167	
		Length of wastewater pumping main interventions (Km)			77.5
		No. of air valves interventions on wastewater pumping mains			365
MA018	Ironworks (water and wastewater)	No. of street furniture interventions (wastewater)		34,176	
MA023	Wastewater Pumping Stations	No. of wastewater pumping station interventions (MEICA and Civils)	687	28,363	1,493
		No. of Legacy wastewater pumping stations improved to meet appropriate standard		216	167
MA054	Network Modelling - (water and wastewater)	No. of network models maintained (wastewater)		454	
MA062	Sewer Structures	No. of sewer network structure interventions	1,079	9,498	847
MA113	Gravity Sewers	Length of gravity sewers Interventions (Km)	251	5.9	
		No. of gravity sewers interventions (chokes and collapses)		408,816	

Table 6: Support Services AR3 outputs

MA ID	Management Approach Name	Primary output (consolidated)	Inspections Outputs	Repair & Refurb Outputs	Replacement Outputs
MA029	Offices, Property and Estates	No. of property or estates interventions	1,703	3,632	79
MA034	Customer Meters	No. of domestic and non domestic water meter interventions (existing)		28	8,274
MA053	Scientific Instrument Replacement	No. of scientific equipment instrument interventions		50	267
MA056	Renewable Energy Asset Maintenance	No. of renewable energy interventions (MEICA and Civil)	260	682	
MA066	Digital Policy	No. of digital transformation interventions		TBC	TBC
MA071	Logistics (Vehicles)	No. of alternative fuel refuelling infrastructure points			436
		No. of vehicle or plant item interventions			2,141
MA098	Emergency Response	No. of emergency equipment interventions (W&WW)	3,198	866	31

* outputs for MA099 Water demand management, MA116 Water Strategic Infrastructure (flooding), MA108 PFI and MA066 Digital are still being finalised

Annex 4d

Asset Management Improvement Plans

1 Asset Management Improvement Plans

1.1 Paragraph 5.4.9 of the Draft Determination highlights the requirement for Scottish Water consolidate the list of actions from its various asset management improvement plans to allow WICS to monitor progress.

1.2 Technical Appendix 008 (TA008) Investment Planning, Section 9 remains the definitive set of milestone commitments (see table below). Within this Annex is where the proposed actions associated with these, and meeting WICS methodology requirement to "address the data and knowledge gaps in its asset condition reporting and forecasting", are consolidated. We are not aware of any improvement plans that have been shared with WICS as part of the SR27 business plan, additional to the milestone commitments and actions set out in TA008 Investment Planning.

1.3 These consolidated actions were developed in response to the methodology requirements, ahead of work, also outlined in TA008 Investment Planning, that would identify objectives for wider improvements in asset management and investment decision making capabilities. We consider this to be a summary consolidation of the key components that will form the refreshed Asset Management Transformation Routemap (originally published in 2021). It remains our intention that:

- The detailed work to refresh and consolidate all asset management improvement plans will be complete by and laid out in our Delivery Plan.
- Identified objectives would be prioritised alongside other opportunities in our Transformation programme.
- We have further dialogue with WICS as these objectives develop to ensure we strike the right balance of enabling regulatory scrutiny and progress monitoring ahead of the SRC33 process without creating a burdensome micro-reporting of every improvement action we are considering within our Management Approaches (See additional note below*).

1.4 Since submission of the SR27 Final Business Plan we have also agreed with WICS to improve the reporting and forecasting of AR3 outputs, and to include a corresponding additional milestone in our Delivery Plan.

Table 1: Investment Planning Milestone

TA008 Investment Planning Milestone	by when	New Evidence
Management Approach documents aligned with SR27 allocations	26/27 Q3	Delivery Plan
Data improvement processes & quality metrics in place (install date)	26/27 Q2	Data Quality
Basic health measure in place for all replaceable assets	26/27 Q4	Health Measure
Intermediate health measure defined & demonstrated	26/27 Q4	-
Data improvement processes & quality metrics in place (data for target health measure)	27/28 Q4	Data Quality
Target health measure in place for all replaceable assets	28/29	Health Measure

***Additional note relating to actions within Management Approaches:**
Highly granular opportunities to improve data sources and modelling specific to each Management Approach are set out in Appendix A of each Management Approach document, provided to WICS as part of the SR27 Final Business Plan submission. AtkinRealis notes in its external assurance of Management Approaches that these opportunities have not been prioritised or aligned with improvement programme objectives. We plan to do this as part of the wider review of asset management improvement objectives set out in TA008 Investment Planning, to be laid out in our Delivery Plan. But we would also welcome the opportunity to discuss the level of detail to be monitored as these actions could run into hundreds of improvements.

Annex 5a
Opex Benchmarking

Contents

1 Summary 3
2 Changes to the Way Opex is Modelled 5
2.1 Differences between Draft Determination and SR27 Final Business Plan 5
2.2 The inclusion of 2024/25 data 5
2.3 The use of 'booster pumping capacity per length of mains' 5
2.4 The use of a narrower set of density variables 6
2.5 Population vs Area Served: Scottish Water compared with companies in E&W 7
2.6 The Recalibration of our Proposed Special Factor Adjustment in Related to Small Water Treatment Works 10
2.7 The Additional Modelling of Opex Less Power Costs 11

1 Summary

1.1 Scottish Water and WICS have engaged extensively through the SR27 business plan development and review process in order to try to form a shared understanding of the underlying data that can be used for opex benchmarking, and of methodological issues and adjustments that arise and that may be appropriate when seeking to develop and apply econometric models to benchmark Scottish Water's opex levels. As a result, the analysis we presented in our Final Business Plan already took account of a wide range of engagement with and comments from WICS, including through feedback on the opex benchmarking assessments in our Draft Business Plan. We focus our attention here on ways in which the WICS analysis differs from that presented in our Final Business Plan. These differences arise from two sources:

- Changes to the way in which opex is modelled; and,
- The additional modelling of 'opex less power costs'

1.2 We focus primarily on change to the way in which opex is modelled below, and address the adjustment that WICS made in its Draft Determination with respect power costs more fully in Annex 5d. In summary:

- We welcome that WICS identified the opex benchmarking in its Draft Determination to be consistent with our findings, with Scottish Water's opex levels found to have been generally lower (ie more efficient)[1]
- While we note the reasons WICS presented in its Draft Determination for excluding the use of an area-weighted density metric in its modelling (which we had included in some the of the models used in our Final Business Plan), we consider the effect of doing this to be that insufficient account is taken of the extent to which the efficient level of Treated Water Distribution costs for Scottish Water is affected by the much larger area over which our customer base is dispersed relative to companies in England and Wales. Taking account of this factor would cause Scottish Water's opex to fall even further below the upper quartile benchmark than is currently estimated in the WICS' analysis. In line with the analysis in our Final Business Plan, we consider £4million/year to be reasonable estimate of the appropriate scale of this adjustment.
- We do not consider the WICS modelling of 'opex less power costs' to provide an appropriate basis for adopting a view of Scottish Water's opex efficiency which differs from that set out above and which was based on extensive opex modelling. The modelling of a narrower range of operating expenditure (excluding power costs) has inevitable limitations. As set out below and in Annex 5d, when the impact of forecast increases in energy (and other relevant) costs is taken into account, Scottish Water's proposed levels of opex remain below the upper quartile level implied by the WICS Draft Determination models throughout SR27.

[1] Draft-Determination-2027-33.pdf, para 6.5.30.

1.3 Overall, we consider the opex benchmarking analysis in the Draft Determination to provide further strong support for our assessment that applying a catch-up efficiency challenge to Scottish Water's opex proposals for SR27 would not be justified.

2 Changes to the Way Opex is Modelled

2.1 Differences Between Draft Determination and SR27 Final Business Plan

2.1.1 WICS's modelling of opex efficiency in its Draft Determination differs from that set out in our Final Business Plan in four main ways:[2]

- The inclusion of 2024/25 data.
- The use of 'booster pumping capacity per length of mains' instead of a measure of 'average pumping head' in relevant Treated Water Distribution cost models.
- The use of a narrower set of density variables than in our Final Business Plan models.
- The recalibration of our proposed Special Factor Adjustment in related to small water treatment works.

2.1.2 We comment on these in turn below.

2.2 The Inclusion of 2024/25 Data

2.2.1 Relevant 2024/25 data for companies in England and Wales had not been made available in time for inclusion in our Final Business Plan modelling, so we based our modelling on data up to and including 2023/24. We welcome the use of relevant, more up-to-date information where available, and therefore the use of 2024/25 data in the Draft Determination.

2.2.2 In its Draft Determination, WICS noted that its analysis shows an improved efficiency score for Scottish Water relative to that included in our Final Business Plan, and said it considered that to reflect an overall increase in water company costs in England and Wales – including higher electricity costs – being picked up by the modelling period changing from 2019/20 to 2023/24 to 2020/21 to 2024/25.[3] We comment on the WICS assessment of energy costs below and in Annex 5d. We note here, though, the finding that Scottish Water's opex has been in line with or better than the upper quartile level does not arise because of the inclusion of 2024/25 data. That is, while the inclusion of 2024/25 does to some extent improve Scottish Water's relative efficiency score compared with the position shown in our Final Business Plan based on data up to 2023/24, we consider the overall results of that analysis to be largely consistent: Scottish Water's opex has been in line with or better than the upper quartile level.

2.3 The Use of 'Booster Pumping Capacity per Length of Mains'

2.3.1 We did not, and do not, have significant concerns over the inclusion of the 'Average Pumping Head – Treated Water Distribution' metric in the Treated Water Distribution models that we used in our Final Business Plan. We note that – despite a range of concerns (similar to those referred to by WICS in its Draft Determination) having been raised and considered in the PR24 process

[2] We address the modelling of 'opex less power costs' below and in Annex 5d.
[3] Draft-Determination-2027-33.pdf, para 6.5.20.

– Ofwat included that metric in some of its final Treated Water Distribution models as a way of seeking to take account of the way in which topography can affect relevant pumping costs. That said, we have not identified a significant cause for concern with instead using the 'booster pumping capacity per length of mains' metric as WICS does in its Draft Determination and note that this change has a limited impact overall on model results.

2.4 The Use of a Narrower Set of Density Variables

2.4.1 The Draft Determination makes two changes to the way in which we included density measures in the modelling used in our Final Business Plan:

2.4.2 WICS excluded models that use a particular density measure: Weighted Average Density (weighted by population) based on Middle layer Super Output Areas (WAD-MSOA).[4]

2.4.3 WICS did not follow our approach of using an area rather than a population weighted measure of density in treated water distribution models.

2.4.4 We welcome the exclusion of those models that used Ofwat's WAD-MSOA metric from the analysis (i.e. 2.4.2 above). As we highlighted in our Final Business Plan, that metric provides a particularly poor way of reflecting the different conditions Scottish Water faces with respect to geographic dispersion relative to companies in England and Wales. On that metric Scottish Water is identified as sitting at the centre of the distribution of companies, whereas in practice – and as shown in the figure below, which we included in our Final Business Plan – Scotland is a substantial outlier relative to England and Wales in terms of population density.

[4] Draft-Determination-2027-33.pdf, para 6.5.15.

2.5 Population vs Area Served: Scottish Water compared with companies in E&W

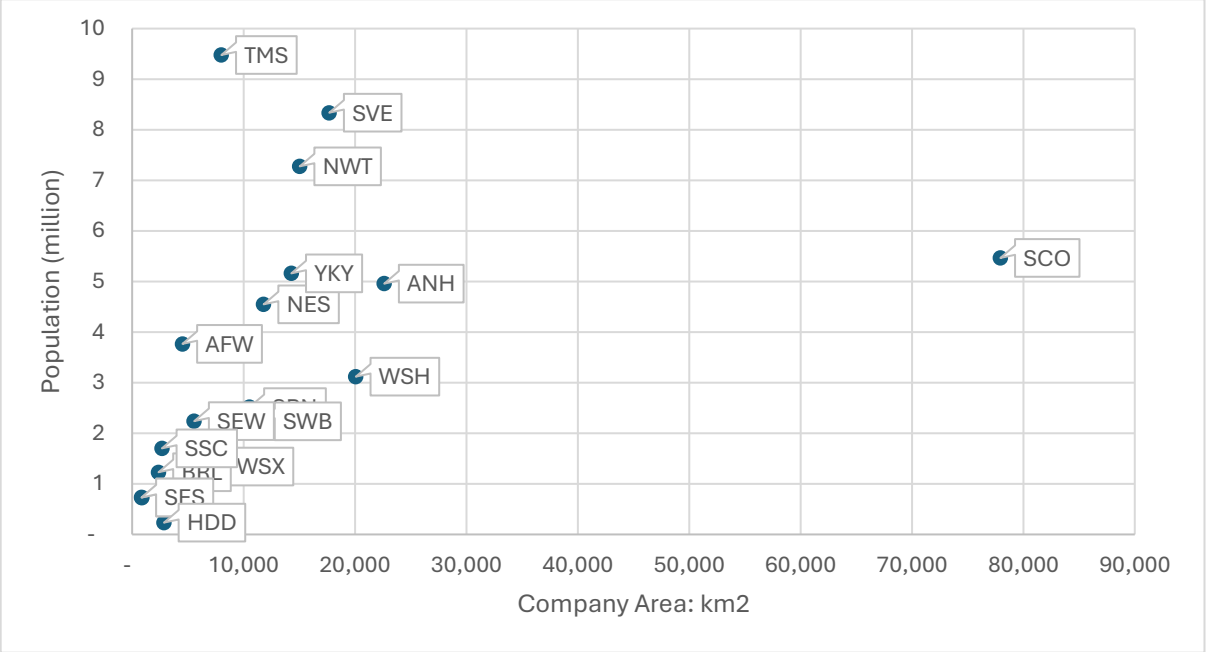


Figure 1: Population vs Area Served: Scottish Water compared with companies in E&W

2.5.1 As we set out in our Final Business Plan, the primary underlying economic rationale for including a density metric in the cost modelling is that more densely populated areas can provide scope for lower unit costs and the more efficient utilisation of resources, for example, with reduced travel times and duplication of depots and spare parts.[5] These factors have a material impact on the efficient costs of supplying water to the Highland and Islands, given the dispersed nature of the population and the need to provide services to a range of remote communities.

2.5.2 In principle, the inclusion of an appropriate density measure when modelling costs would be expected to provide a reasonable means of taking account of this, because it is the sparsity of the population in the Highlands and Islands that drives higher (efficient) costs. Given this, and in line with feedback from WICS, in our Final Business Plan, we sought take account of this impact of this factor on Treated Water Distribution costs within the modelling process (rather than through proposing a Special Factor Adjustment). In doing so, we highlighted that a challenge when seeking to apply Ofwat's models to Scottish Water is that the form of geographic dispersion that Scottish Water faces – in particular when serving the Highlands and Islands – differs considerably in some respects from that faced by companies in E&W: as was highlighted above, by reference to the scatter graph, Scottish Water is a clear outlier.

[5] See Technical Appendix 012, Annex A.

2.5.3 Ofwat's PR24 models included three separate density metrics:

- Population weighted average density by MSOA (WAD-MSOA);
- Population weighted average density by Local Authority District based on MSOA data (WAD-LAD); and,
- Connected properties per length of mains (properties/length).

2.5.4 While the exclusion of models with the WAD-MSOA density metric (above) – as in the Draft Determination – lessens the limitations of the density measures included in the overall suite of models to some extent, as set out in our Final Business Plan there are also highly material limitations with the other two density metrics.[6] The graph below shows how Scottish Water compares to companies in England and Wales in terms of the WAD-LAD density metric. As can be seen, this metric also (i.e. as with the WAD-MSOA metric) fails to capture the extent of geographic dispersion that Scottish Water faces, with Scottish Water identified as serving an area that it more densely populated than a number of other companies, including Wessex Water, Anglian Water and Dwr Cymru.

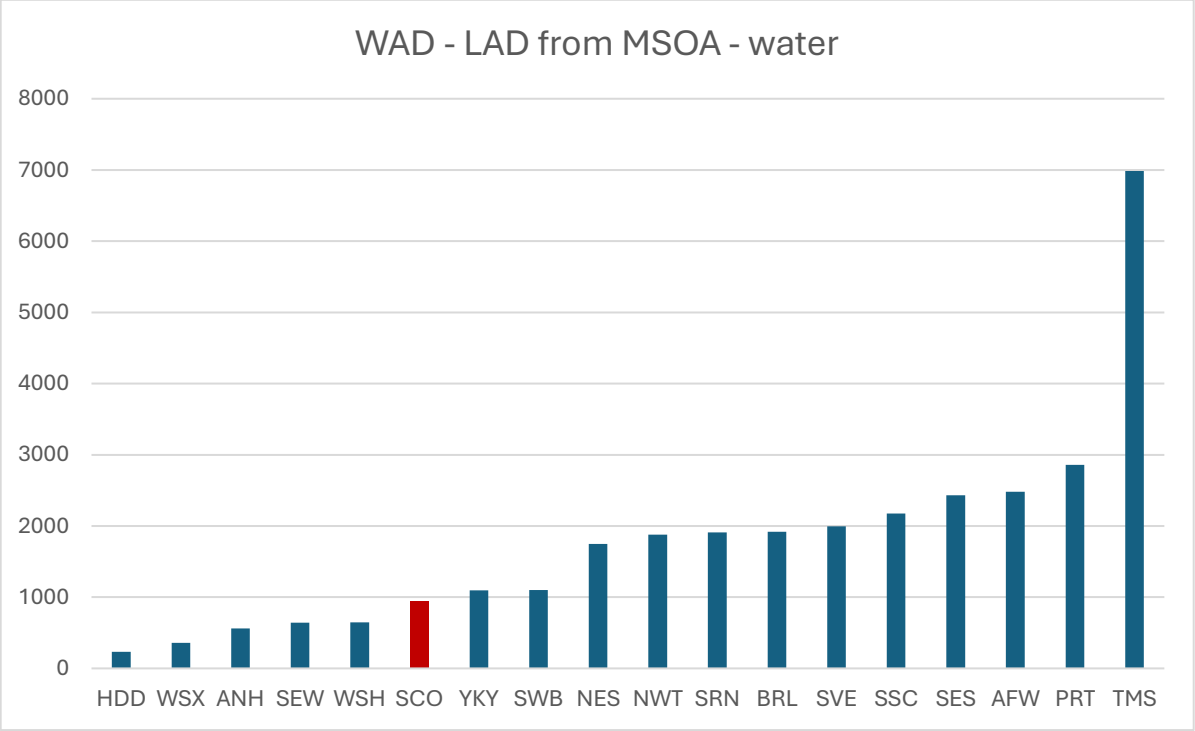


Figure 2: WAD-LAD from MSOA - Water

2.5.5 This positioning arises because, under this metric, the population density level identified for each Local Authority District (LAD) is weighted by the population of that district. For Scottish Water, that means that although the very low levels of population density in equivalent LADs in the Highlands and Islands are taken into account, in practice they have little bearing on the overall density figure because of the very low population levels in those LADs. In our view, therefore,

[6] See Technical Appendix 012, Annex A, pages 82-91.

the WAD-LAD metric (as well as the WAD-MSOA metric) does not provide a sufficient means of reflecting geographic dispersion and associated remoteness in Scotland.

2.5.6 The graph below compares Scottish Water to companies in England and Wales under the third density metric shown above: properties/length. We consider that this density metric also fails to sufficiently reflect the extent of geographic dispersion in Scotland. By simply measuring overall length of mains and number of connected properties by company, no account is taken of how dispersed or otherwise that length of mains and those connected properties are. For example, the serving a community such as Shetland, given the number of connected properties per length of mains associated with it, is affected by the (lack of) proximity of those properties and connected mains to other properties and connected mains in Scottish Water's supply area. The properties/length metric takes no account of how dispersed and fragmented or otherwise the relevant network is.

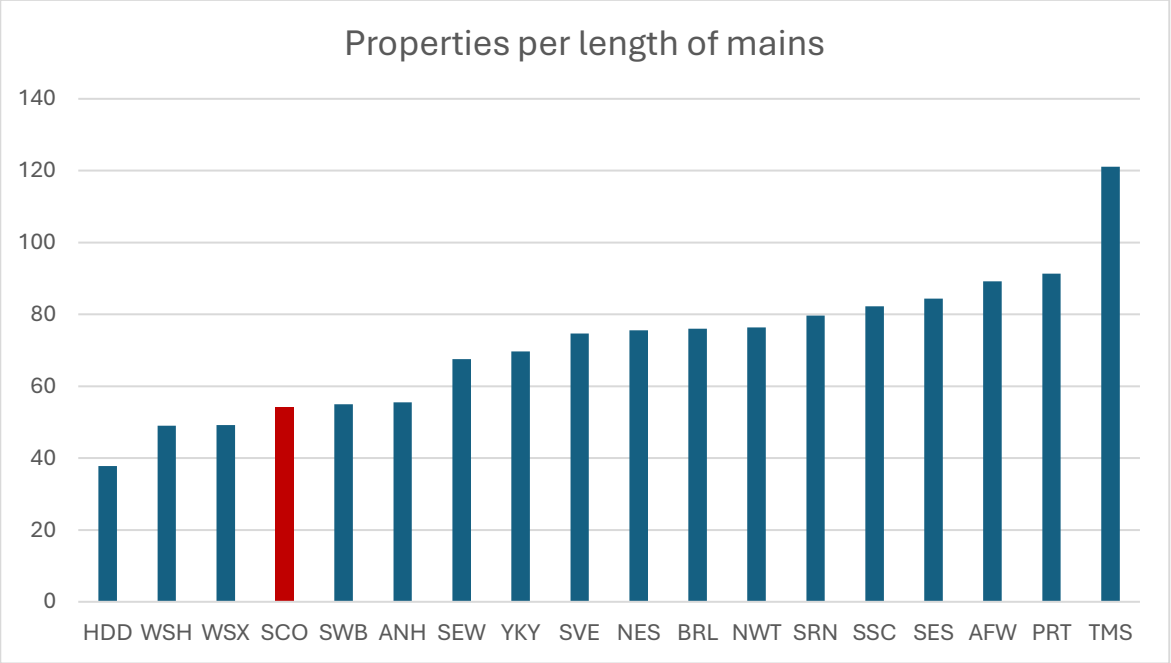


Figure 3: Properties per Length of Mains

2.5.7 In our Final Business Plan, we sought to take account of this within the modelling by including a different density measure – population density weighted by area (rather than by population) – in some models. We recognised that there is a risk that a measure of density weighted by area would put a high weight on areas of Scotland where Scottish Water has no assets and as such might over-estimate predicted costs. We took account of this by only including the area-based density measure in 4 of the models, with this implying that – for Treated Water Distribution costs – we were putting a one third weight on the results of models using this different metric, and a two thirds weight on models

that used Ofwat's density metrics.[7] As WICS recognised in its Draft Determination, this approach increased the statistical performance of the Treated Water Distribution models.[8] We considered this likely to be a balanced approach.

2.5.8 In its Draft Determination, WICS set out that it considered the use of a consistent measure of density across different models ensures that density is captured consistently at a company-level and would improve reliability.[9] We recognise that there may be benefits in adopting this kind of consistency across models, but would emphasise continuing with models that only seek to capture differences in density through the WAD-LAD and properties/length measure do not address the limitations with those metrics highlighted above (and that were noted in our Final Business Plan). Given that, if the impact of geographic dispersion on Scottish Water's efficient Treated Water Distribution costs is not to be taken into account directly through the suite of models that used, we consider it appropriate to apply an additional Special Factor Adjustment to reflect this (because otherwise this issue is effectively being ignored).

2.5.9 We note that the analysis included in our Final Business Plan – which, as set out above, effectively involved using an area-weighted density measure in one third of the Treated Water Distribution models – provides one way of calibrating what the appropriate scale of that adjustment should be. That implied that it would be appropriate to increase in the modelled upper quartile benchmark for Scottish Water by around £4million/year to reflect the impact of geographic dispersion on efficient Treated Water Distribution costs.[10]

2.5.10 An alternative approach would be to consider the impact of re-running the WICS Draft Determination models but replacing the population-weighted WAD-LAD density metric with an area-weighted WAD-LAD density metric. This would imply an increase to the upper quartile benchmark of around close to £9million per year. While, as was noted above, there is a risk that using an area-weighted density measure could overstate efficient cost requirements to some extent, we consider this reference point to provide further support for the reasonableness of the scale of the c£4million/year adjustment we presented in our Final Business Plan (which was equivalent to around 45 per cent of that £9milion estimated impact). That is, a £4million Special Factor Adjustment to reflect the impact of geographic dispersion on efficient Treated Water Distribution costs would be consistent with putting weight on the overall results using both a population- and an area-weighted density metric.

2.6 The Recalibration of our Proposed Special Factor Adjustment in Related to Small Water Treatment Works

2.6.1 We welcome that in its Draft Determination, WICS accepted the special factor claim included in our Final Business Plan related to small water treatment works, having concluded that Scottish Water provided sufficient evidence of the

[7] See Technical Appendix 012, Annex A, p83, p103.
[8] Draft-Determination-2027-33.pdf, para 6.5.11.
[9] Draft-Determination-2027-33.pdf, para 6.5.11.
[10] See Technical Appendix 012, Annex A, p83, p103.

need for a special factor adjustment. While we consider our initial estimate to have provided a reasonable way of capturing the appropriate scale of the adjustment, we recognise that excluding models that used the WAD-MSOA density metric from the analysis would be likely to have some beneficial offsetting effect (as set out above, that metric provides a particularly poor way of reflecting the different conditions Scottish Water faces with respect to geographic dispersion relative to companies in England and Wales). Given this, we consider the Draft Determination to have provided a balanced way of taking this factor into account.

2.7 The Additional Modelling of Opex Less Power Costs

2.7.1 Having found that Scottish Water's opex was generally lower than an upper quartile benchmark over the period 2020/21 to 2024/25, the Draft Determination goes on to state that:

'However, WICS considers that this position reflects Scottish Water's contract to pre purchase around 50% of the electricity that it consumes and consequently having significantly lower electricity costs than the companies in England and Wales over the modelling period.'[11]

2.7.2 We do not consider the analysis that WICS presented in its Draft Determination to provide a reliable basis for forming that view. The assessment that Scottish Water's opex level has been consistent with or better than the upper quartile level was formed following extensive opex benchmarking analysis by Scottish Water and WICS. By contrast, we consider the comments made in the Draft Determination with respect to power costs, and their implications for the interpretation of Scottish Water's opex efficiency, to be poorly founded and/or highly speculative in nature.

2.7.3 It is to be expected that Scottish Water's purchasing of power in SR21 would contribute to its overall opex performance to some extent. But that does not imply – and the analysis presented in the Draft Determination does not show – that is it reasonable to view the finding that Scottish Water's opex efficiency has been consistent with the upper quartile level as somehow not valid, such that a catch-up efficiency adjustment may be justified.

2.7.4 As highlighted further in Annex 5d, the remodelling of opex excluding power costs (using the same explanatory variables) does not justify the application of a catch-up efficiency challenge. This type of analysis has inevitable limitations, because companies will face different features (e.g. in terms of density and topography) and make different trade-offs (for good reasons) that can affect the composition of their opex levels. For example, decisions related to the location of water treatment works can be affected by assessments of the location and quality of potentially available raw water inputs, both of which can impact on the composition of subsequent opex levels: in this example, the balance between energy (given pumping requirements) and chemicals (given treatment requirements) costs. Given this, there is a material risk that the results of analysis of a sub-set of opex (which the modelling of opex less power costs is)

[11] Draft-Determination-2027-33.pdf, para 6.5.31.

will reflect factors other than efficiency. As a result, it is appropriate to treat the results of such analysis with caution, and not as conclusive.

2.7.5 That is relevant because the WICS analysis shows that if the modelling is re-run with power costs wholly excluded, then Scottish Water would fall from the being identified as the second to the fourth most efficient of eleven water and sewerage companies across Scotland and England and Wales. That is, this analysis suggests that – at most – removing the impact of Scottish Water's energy purchasing during SR21 could result in Scottish Water falling from being ranked above (i.e. 2nd place), to being ranked just below (i.e. 4th place), the upper quartile company. But the analysis does not show that Scottish Water should be ranked just below the upper quartile company (i.e. 4th place): as set out above, running the models having simply excluded energy costs does not provide a reliable basis for reaching that view on efficiency.

2.7.6 A concerning feature of the Draft Determination is that, having presented its analysis of opex less power costs, WICS then appears to proceed as though it has established that Scottish Water's opex should be regarded as inefficient and speculates as to why this apparent finding might be the case:

'WICS notes that the number of employees for regulated water and wastewater services at Scottish Water has increased between 2021-22 and 2024-25 by 15%. WICS recognises that some of this increase will be to support the larger investment programme over the 2021-27 regulatory period. However, this may be one of the factors resulting in a reduction in Scottish Water's efficiency when power costs are excluded from the analysis.'[12]

2.7.7 We do not consider it appropriate for this kind of speculative remark to form part of the WICS assessment and request confirmation that it is not being treated as such.

2.7.8 We would emphasise that movements in employee numbers over time will be affected by a number of factors that include the scale of relevant investment programmes, but also, importantly, internal policy decisions on the extent to which projects are managed through outsourcing or internally. We note decisions to deliver a greater proportion of project work internally rather than through outsourcing will inevitably imply higher employee numbers, other things being equal, but this need have no direct implications for the assessment of efficiency. As set out above, the assessment of opex efficiency has been undertaken following extensive engagement on methodology and modelling issues, but also on the gathering of relevant and reliable data inputs. Given that, we consider it important that assessments remain focused on approaches to benchmarking that have been tested and subject to careful consideration, and that more speculative comments of this kind do not form part of the assessment process.

2.7.9 In our view, a much more reliable way of considering the impact of energy price movements on the assessment of Scottish Water's opex efficiency is to

[12] Draft-Determination-2027-33.pdf, para 6.5.35.

consider how that efficiency position has been and would be affected over time given different energy cost conditions. An immediate point of note here is that the WICS's assessment of Scottish Water's opex efficiency shows Scottish Water's opex to have been a little better than the upper quartile level in 2020/21: that is, before the significant divergence in energy costs that WICS highlights in Figure 62 of its Draft Determination.[13] This can be seen in the left hand side of the graph below, which replicates the results from WICS's modelling as set out in Figure 61 of its Draft Determination.[14]

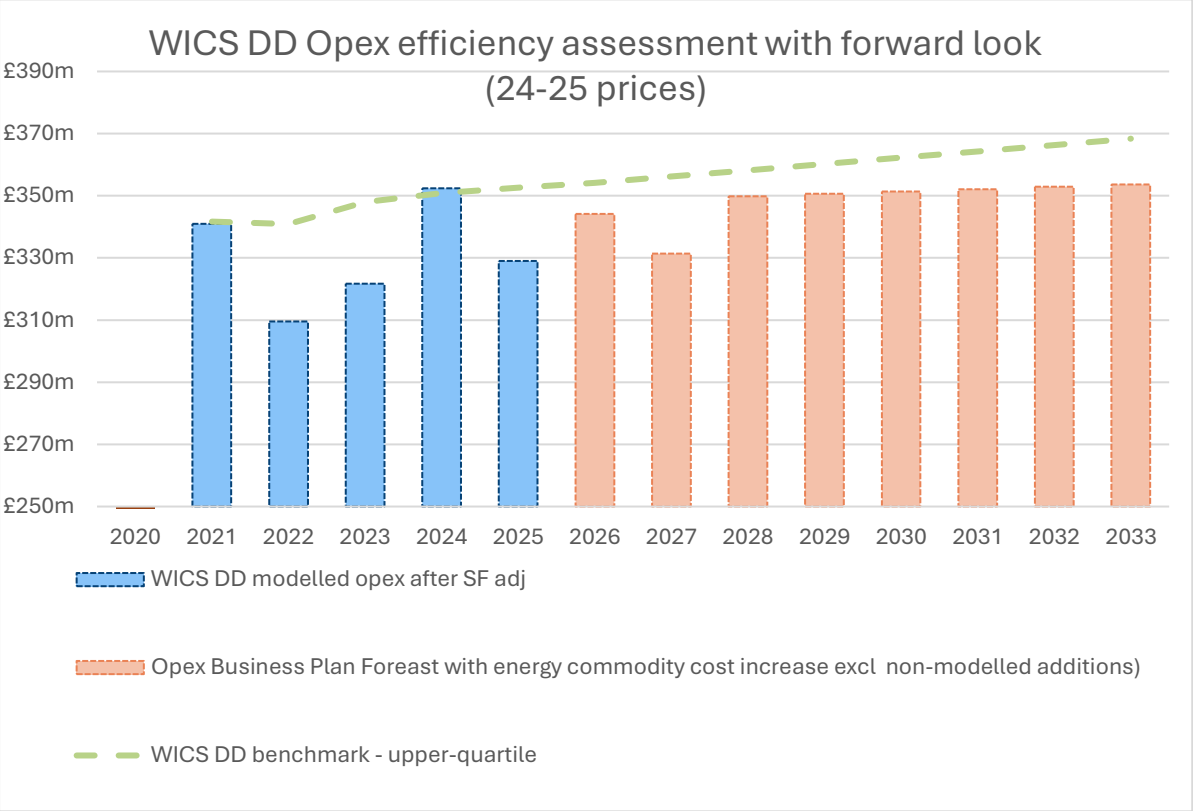


Figure 4: WICS DD opex efficiency assessment with forward look

2.7.10 The graph also provides a forward-looking comparison between Scottish Water's modelled opex levels – in line with the requested additions in our Final Business Plan – and the upper quartile benchmark implied by the modelling WICS set out in its Draft Determination. This comparative approach aligns with that used by WICS in its feedback on our Draft Business Plan. Importantly, the comparison includes Scottish Water's proposed £10million increase in energy commodity costs from 2027/28 onwards resulting from the expiry of the power purchase agreement that WICS pointed to in its Draft Determination as potentially explaining Scottish Water's upper quartile opex performance. As the graph shows, Scottish Water's proposed opex levels remain materially lower than the upper quartile benchmark including after the end of the power purchase agreement that Scottish Water's customers benefited from in SR21.

[13] Draft-Determination-2027-33.pdf, page 196.
[14] Draft-Determination-2027-33.pdf, page 195.

As set out further in Annex 5d, we consider the above comparison to be conservative in a number of ways, including because it does not take sufficient account of the impact of geographic dispersion on efficient treated water distribution costs.

2.7.11 Overall, we consider the opex benchmarking analysis in the Draft Determination to provide further strong support for our assessment that applying a catch-up efficiency challenge to Scottish Water's opex proposals for SR27 would not be justified. We do not consider that the analysis of energy cost impacts in the Draft Determination (or the comments made in that context with respect to the employee numbers) should be treated as affecting that conclusion.

Annex 5b

Bad Debts and Working Capital

Contents

1 Introduction 3
2 Background 4
3 The Bad Debt Charge Explained 6
4 The Recent History of the Bad Debt Provision 7
5 Our New Modelling 9
6 Offsets in “Working Capital” 11
7 Overall Effect 12
8 Why this Should be Subject to Uncertainty 13
9 Modelling of these Effects 14

1 Introduction

1.1 In their Draft Determination[1], WICS has proposed a reduction in the bad debt charge equal to £12.6m over SR27 in 24-25 prices to reflect the logic adopted in the Final Business Plan, adjusted for the lower proposed charge path.

1.2 In reviewing WICS' adjustment to our bad debt charge, we have identified a further funding requirement arising from current trends in the rate at which Scottish Water collects its revenues from household customers.

1.3 The proportion of revenue billed in a year that Councils collect on behalf of Scottish Water appears to be declining over time and this risks creating a cash shortfall for the business over the SR27 period which we are unable to address via typical borrowing facilities, such as a revolving credit facility, that are available to other companies.

1.4 In the past, the shortfall in cash collection has been largely offset by increases in creditors. We do not expect that this will be true in SR27, but a partial offset is likely to exist and so we have amended the inputs to the financial model to ensure that this effect is captured, as it reduces the impact of the declining billing collection.

1.5 Our analysis indicates that the net of these effects is likely to create a cash shortfall over the SR27 period.

1.6 The range of potential outcomes are wide. For the purposes of the following analysis, we have set out a scenario based on the average receipts over the 5 years up to and including 25/26, which shows an £81m shortfall over SR27.

1.7 To illustrate the material uncertainty – if receipts are at 25/26 levels (lowest in the 5 years) the shortfall rises to £185m and if receipts are at the highest level in the 5 years (22/23), a small excess is generated (£7m).

1.8 We propose that this wide range of outcomes are best mitigated by the inclusion of bad debt and working capital outcomes in the uncertainty mechanism (see Annex 9b).

1.9 This annex sets out the reasons for and impact of these effects.

[1] WICS sets out their consideration of bad debt charges in the Draft Determination, paragraphs 6.6.24 to 6.6.29.

2 Background

2.1 Each year, Councils in Scotland issue household water bills alongside Council Tax bills and they collect funds from customers on our behalf and transfer these to us. While the large majority of the revenue billed in a given year is collected in that year, some of it is collected over subsequent years, with Scottish Water still collecting small amounts of revenues dating back to bills issued in 1996.

2.2 Having seen a trend of increasing collections, we are now experiencing a slowdown in the timing of those:

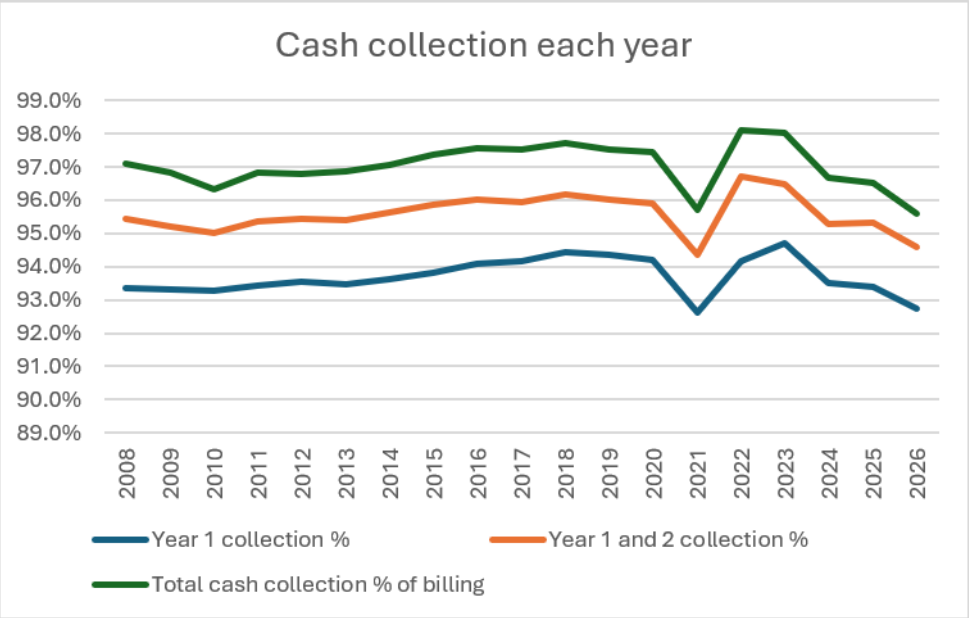


Figure 1: Cash Collection Each Year

2.3 This graph identifies two noteworthy effects:

- We are seeing that everything we collect in a given year, irrespective of its age, is falling as a proportion of the amounts we bill (green line). This is bucking the trend we saw through to 2023; and
- After years of increasing collections (aside from a dip during COVID), we are now seeing less of our debt paid in the year it is billed (blue line). Some of this will be due to a move to 12-month direct debits rather than 10 from some councils[2] – this is suggested by the widening gap between the blue and orange lines.

2.4 Examining the first-year collection rate in more detail (i.e. the cash received in the year which relates to the billing of that year) we have only recently seen the results for the year dropping below the long-term average of 93.12%:

[2] Councils collect from customers, and then remit the money to us at a later date. As a result, some of the March direct debits are not received until the following financial year.

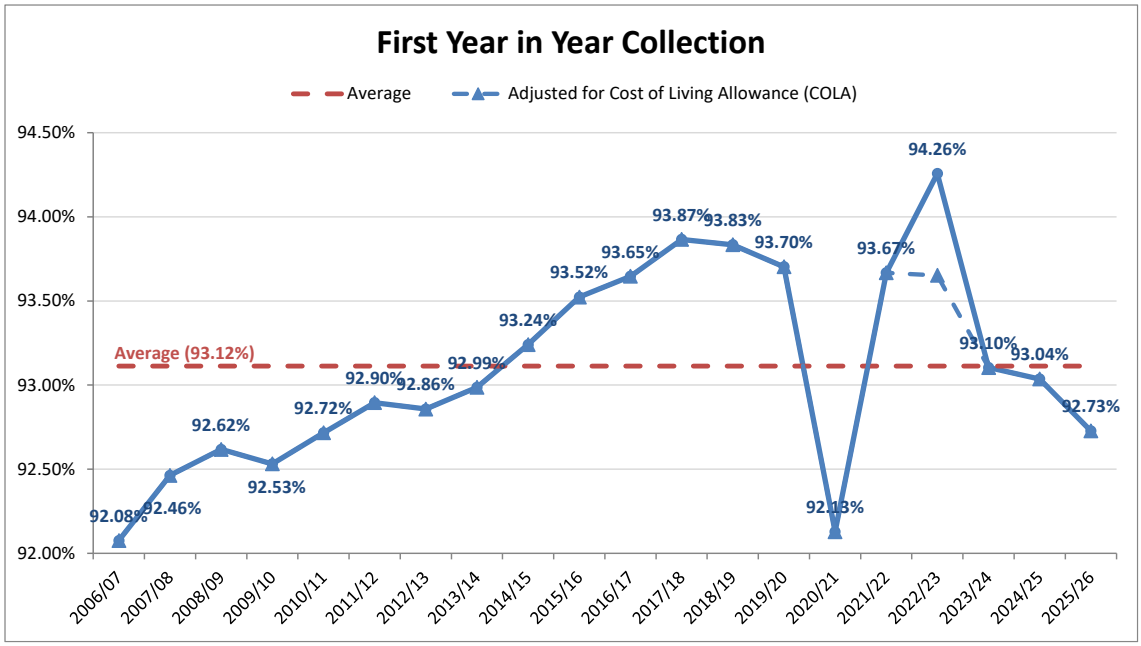


Figure 2: First Year in Year Collection

2.5 This falling percentage may result in a higher bad debt charge in due course, but the key issue for the SR27 period is that this effect means that the actual cash we receive from customers in any given year is less than currently included within the financial model.

3 The Bad Debt Charge Explained

3.1 Bad debt charges are an accounting estimate each year, designed to build up a provision to reflect that not all bills raised to customers will be paid. It is arrived at by looking at the proportion of bills in total which Scottish Water expect to not ever be paid – in the long-run we currently anticipate this is around 3% of bills. This estimate can and will change over time (see section 4 below) and is driven by a combination of historical collection trends, near-term collection indicators and economic outlook. It is inherently subjective as it is a prediction of an unknown future, but management's estimates are subject to scrutiny through our annual external audit process as a key estimate and judgement.

3.2 If we see falling expectations on collections, this may trigger a large bad debt charge as it looks at all of our unpaid debt, not just the amount for the current year. Equally, if collection expectations increase this results in a lower charge.

3.3 If everything were in equilibrium, our bad debt charge would be equal to c.3% of the current billing, but in practice the changes in timing and overall expectations cause this to move.

3.4 However, the bad debt charge is an "income statement"[3] entry, which is not the same as the cashflow impact of the rate at which we collect cash from our customers. This latter (and not the former) determines the level of cash that Scottish Water has available to invest.

[3] I.e. it is calculated for inclusion on the income statement in Scottish Water's financial statements.

4 The Recent History of the Bad Debt Provision

4.1 During SR15 and throughout the SR21 period to date, we continued to collect old debt, which meant overall collection expectations kept rising. This insulated the bad debt provision from growing at the same rate as new debt was being added:

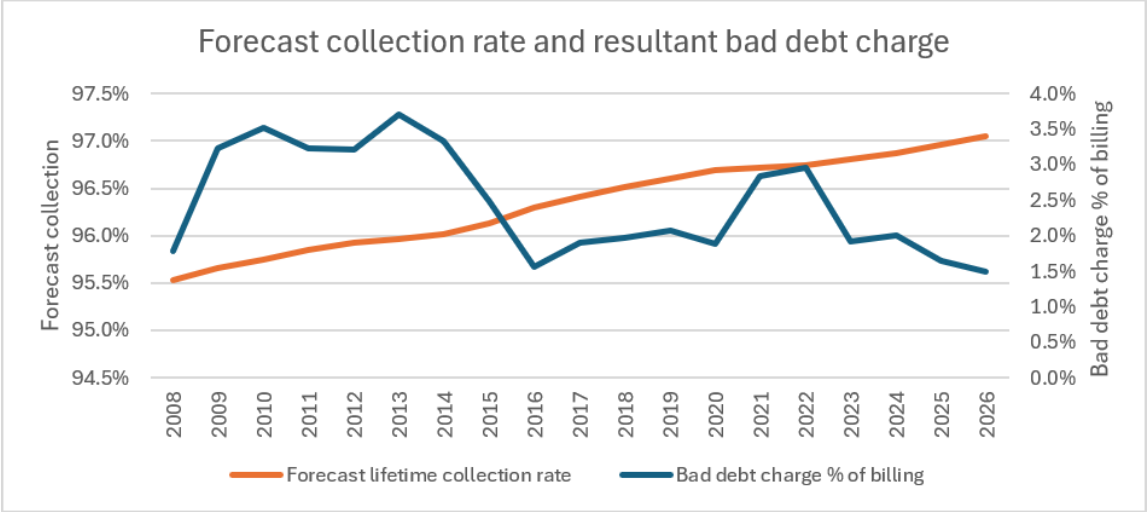


Figure 3: Forecast Collection Rate and Resultant Bad Debt Charge

4.2 In this graph, we see that despite the forecast collection rate being around 97%, implying a 3% non-collection; the bad debt charge that results is often below that. This is because the increasing collection expectation for all debt creates an offset against the non-collection expectation of the new debt created with customer bills each year.

4.3 In the graph below, we see that previously, annual collection experience was higher than 97% - this drives the increase in forecast collection rate and suppresses the bad debt charge.

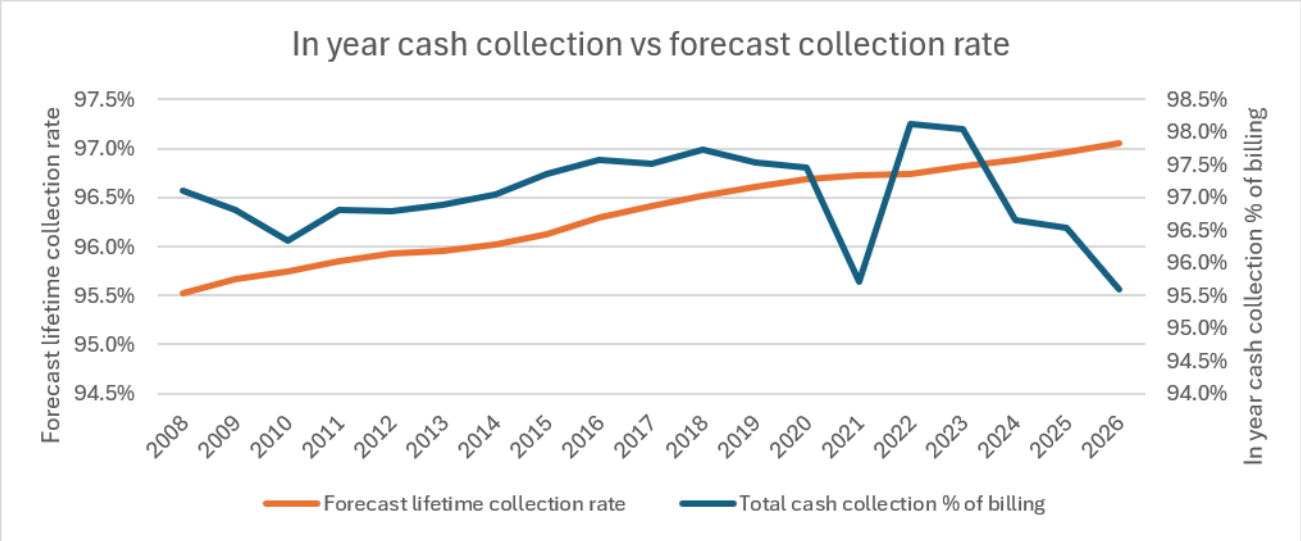


Figure 4: In Year Cash Collection vs Forecast Collection Rate

4.4 For example – in the year ended March 2026, our bad debt expectation was 97.05%. Household billing was £1.15 billion, which would give a bad debt charge of £34 million. But this collection expectation of 97.05% had risen by 0.08% compared to the year before. Total life-to-date billing is £19.00 billion, so this 0.08% increase generated an offset of £15m leading to the actual charge we recognised being £19 million.

4.5 Now that the line in figure 1 is continuing to extend under the 97%, this implies that this offset effect will stop or even reverse, and the bad debt charge will start to normalise at the 3% of billing level, and may even increase beyond that.

4.6 In the past, Scottish Water held a balance of up to £500m of cash, which could act as a buffer for movements in bad debt as we see above. Now, through deliberate and transparent action to support Investment Programme spending this has reduced to £50-£100m in any given year. This is around the minimum which the Board expects to be held for unforeseen events, meaning that in any given year the actual cash received is the only cash available to meet operating costs and Investment – Scottish Water must only spend the cash it receives from one year to the next.

4.7 The effects and factors above now imply two key changes:

- The bad debt charge will move higher than the assumptions in the Final Business Plan and Draft Determination; and
- In any given year, we may receive less cash even than a calculation of total billing less bad debt charge would imply.

4.8 Either of these outcomes will result in a shortfall in the financial model and the funding intentions of the charge path.

5 Our New Modelling

5.1 If we assume that collection expectations stabilise at around 97%, this would generate a bad debt charge equal to 3% of each year's billing.

5.2 If we also assume that the payment profile of household debt each year is equal to the average profile we have seen in the 5 years since COVID, we can project the cash that will be received and the resulting change in household debtors after deducting the 3% bad debt charge.

5.3 With a charge path of CPI+3.2% and inflation as envisaged in the draft determination we would expect the following, ***which results in £194m (£172m in 24/25 prices) less cash.***

		2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	SR27 Cumulative impact
Billings	Nominal	1,395.2	1,480.6	1,571.2	1,670.5	1,774.5	1,884.9	2,002.2	
Bad Debt	Nominal	(20.0)	(21.1)	(22.2)	(23.4)	(24.6)	(25.9)	(27.2)	
Change in Debtors	Nominal	(26.5)	(27.4)	(29.1)	(31.2)	(33.3)	(35.5)	(37.9)	
Cash flow from Collections	**Nominal**	**1,348.7**	**1,432.1**	**1,519.9**	**1,616.0**	**1,716.6**	**1,823.5**	**1,937.0**	
Difference to DD Response model approach	24/25 Prices	(25.1)	(25.5)	(26.5)	(27.9)	(29.2)	(30.5)	(31.9)	**(171.5)**

Table 1: Bad debt charge and actual cash collection at 5-year average, compared to DD.

5.4 It is critical to note that this is simply one possible outcome – if in-year collections improve we will receive more cash, and vice versa. SR27 household billing is expected to be c. £12 billion, meaning each 0.1% change in household cash collection just on new bills across the SR27 period would change total funding received by £12m.

5.5 In fact, if we keep the same bad debt charge (3%) and instead apply the highest and lowest collection years of the last 5, we see the following outcomes:

		2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	SR27 Cumulative impact
Billings	Nominal	1,395.2	1,480.6	1,571.2	1,670.5	1,774.5	1,884.9	2,002.2	
Bad Debt	Nominal	(41.9)	(44.4)	(47.1)	(50.1)	(53.2)	(56.5)	(60.1)	
Change in Debtors	Nominal	(20.4)	(20.8)	(21.9)	(23.4)	(24.8)	(26.2)	(27.8)	
Cash flow from Collections	**Nominal**	**1,333.0**	**1,415.4**	**1,502.1**	**1,597.0**	**1,696.4**	**1,802.1**	**1,914.3**	
Difference to DD Response model approach	24/25 Prices	(40.0)	(41.0)	(42.8)	(44.9)	(46.9)	(48.9)	(51.1)	**(275.4)**

Table 2: Bad debt charge and actual cash collection at 5 year low, compared to DD.

		2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	SR27 Cumulative impact
Billings	Nominal	1,395.2	1,480.6	1,571.2	1,670.5	1,774.5	1,884.9	2,002.2	
Bad Debt	Nominal	(41.9)	(44.4)	(47.1)	(50.1)	(53.2)	(56.5)	(60.1)	
Change in Debtors	Nominal	8.8	10.2	11.0	11.7	12.4	13.3	14.2	
Cash flow from Collections	**Nominal**	**1,362.1**	**1,446.4**	**1,535.1**	**1,632.1**	**1,733.7**	**1,841.6**	**1,956.3**	
Difference to DD Response model approach	24/25 Prices	(12.4)	(12.2)	(12.7)	(13.5)	(14.2)	(14.9)	(15.7)	**(83.3)**

Table 3: Bad debt charge and actual cash collection at 5 year high, compared to DD.

5.6 This shows that in three scenarios fully consistent with recent experience, there is a potential £192m difference in cash outcome between them.

6 Offsets in "Working Capital"

6.1 Working capital describes the change in cash that results from movements in balances in the organisation such as debtors and creditors. We have described above the changes in household debtors – this makes up the bulk of debtors balances.

6.2 Having considered debtors, we would be remiss in not considering the other balances in working capital as they would most likely reduce and mitigate the impacts described above.

6.3 We have therefore examined the other working capital balances and propose changes to the figures, as detailed below.

	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	Cumulative Impact (2027/28 to 2032/33)
Other Assets								
Change in Stocks	(0.9)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	**(0.6)**
Change in Other trade debtors	(2.6)	(0.7)	(0.8)	(0.9)	(0.9)	(0.9)	(1.0)	**(5.2)**
Change in Accrued income	(0.2)	-	-	-	-	-	-	**-**
Change in Prepayments	6.0	(2.8)	(0.5)	(0.1)	(0.1)	(0.1)	(0.2)	**(3.7)**
Change in VAT receivable	(0.5)	(1.7)	(1.2)	(1.2)	(1.3)	(1.4)	(1.5)	**(8.2)**
Total Change in Other assets	**1.7**	**(5.3)**	**(2.5)**	**(2.3)**	**(2.3)**	**(2.5)**	**(2.7)**	**(17.7)**
Creditors								
Change in Trade creditors	0.1	3.8	1.0	0.2	0.2	0.2	0.4	**5.7**
Change in Accruals	(2.0)	12.4	3.2	0.5	0.5	0.8	1.2	**18.6**
Change in Short-term capital creditors	6.1	(10.1)	9.3	11.9	12.3	13.0	13.6	**50.0**
Change in Other creditors	4.0	2.4	2.5	2.6	2.6	2.7	2.7	**15.6**
Total Change in Creditors	**8.2**	**8.5**	**16.0**	**15.1**	**15.6**	**16.8**	**17.9**	**89.8**
Other Liabilities								
Change in Wholesale charge prepayment	5.6	5.8	6.4	6.6	6.9	7.3	5.9	**39.0**
Change in Credit note provision	(5.2)	0.2	0.3	0.3	0.3	0.3	0.3	**1.6**
Change in Infrastructure charges	0.2	0.2	0.2	0.2	0.2	0.2	0.3	**1.4**
Change in Third party contributions	(2.0)	(4.9)	0.1	0.1	0.1	0.1	0.1	**(4.2)**
Change in Other provisions	3.0	(11.0)	0.8	0.9	0.9	0.9	0.9	**(6.6)**
Total Change in Other Liabilities	**1.7**	**(9.6)**	**7.9**	**8.1**	**8.5**	**8.9**	**7.5**	**31.2**
Total Change in Other working capital items	**11.6**	**(6.5)**	**21.3**	**20.9**	**21.7**	**23.1**	**22.7**	**103.3**

Table 4: Working capital changes

7 Overall Net Effect

7.1 The 5-year average cash collection would result in a net cash shortfall of £91m in out-turn cash, being £194m shortfall in household cash collections partially offset by £103m of other working capital movements. In 24/25 prices the net impact is £81m.

7.2 This figure is £185m shortfall at the 5-year low collection and £7m surplus at the 5-year high collection (all in 24/25 prices).

8 Why this Should be Subject to Uncertainty

8.1 As the data shows, our collection experience can vary from year-to-year and as a trend. We believe a sensible assumption is a status quo, but it may well improve to levels seen in the past, especially as recent nominal price increases become imbedded in the baseline.

8.2 If it improves, we might receive more funding in the regulatory period than the determination intends. Equally we may receive less, which would impact our achievement of outcomes for customers.

9 Modelling of these Effects

9.1 These changes can be captured in the model without the need to change its logic or operations as it can be achieved via inputs. We propose to work with WICS during SR27 to consider whether any refinements to our shared model would facilitate consideration of the above factors.

Annex 5c

Operating Costs of Returning PFI Sites

Contents

1 Summary 3
2 Benchmarking of PFI Costs Against WASCs in England & Wales 6
3 Assessment of Potential Operating Cost Savings: WCB 9
4 Scottish Water's Operating Cost Forecasts are Reasonable 12
5 Scottish Water's Detailed Operating Cost Forecasts 17
6 Schedule 1: Dalmuir 19

1 Summary

1.1 In its Draft Determination, WICS has made a £100 million (or 26%) downwards adjustment to Scottish Water's forecasted operating costs of its returning PFI assets over the SRC27 period. This adjustment reflected WICS' assessment that the efficient costs of operating these sites is approximately £17 million per year lower on average over the SR27 period than Scottish Water has forecast.

1.2 In coming to this provisional conclusion, WICS explains that it has assessed the reasonableness of Scottish Water's forecast costs using the following three approaches:

- Benchmarking against the costs of the water and sewerage companies (WaSCs) in England and Wales;
- High-level comparison against existing PFI fees; and
- Review of Scottish Water's detailed operating expenditure forecasts.[1]

1.3 We agree with WICS' broad approach to benchmarking the costs of our returning PFI sites and we recognise that the forecast level of operating costs at these sites for the SR27 period are above the longer-term efficient level.

1.4 However, we do not believe that WICS' approach in its Draft Determination, which effectively assumes that this level of efficiency can be achieved as soon as these sites transfer to Scottish Water's control, and provides a cost allowance accordingly, is reasonable. The PFI sites have been designed, built and operated by Scottish Water's PFI partners. The PFI operators of these sites made totex choices that differ materially from those that were typically selected by Scottish Water. In many instances they chose "capex-light, opex-heavy" solutions.[2] This is particularly evident in the case of Dalmuir (see Schedule 1 for more details). These choices effectively lock Scottish Water into specific operating models – and associated costs – even once the assets are returned.

1.5 To achieve the long-run efficient level of costs across our portfolio of wastewater and bioresource sites – which we fully recognise as an efficiency imperative for the business – Scottish Water will need to undertake significant (in terms of time and cost) capital investments. In SR27, we are proposing to do this primarily via our investment in the West Central Bioresource project, which will create significant operational efficiencies at Daldowie directly, as well as reducing sludge treatment costs at other sites during SR27. In addition, the WCB investment is expected to facilitate further operating cost savings at other returning PFI sites (including Tay and Moray) during the SR33 period. We have also undertaken a study to identify a new solution with reduced operating costs

[1] Draft-Determination-2027-33.pdf, para 6.7.5.
[2] We note that one of the original aims of using PFI solutions was to generate competition between private providers to identify alternative Totex solutions to those generally chosen by water companies in the UK.

for the Dalmuir site, with investment in that site to deliver a more efficient operating model to take place either late on in SR27 or early in SR33.

1.6 As we set out in more detail below, our analysis indicates that the WCB investment should result in material operating cost savings once completed. Indeed, our assessment at the Gate 70 stage indicates a slightly greater level of expected annualised operating cost savings than WICS' econometric benchmark suggests should apply across all returning PFI sites (£21.7 million per year once fully operational[3] compared with WICS' estimate of £21 million in 2032/33). However, these can only start to be realised from around August 2031 onwards when the WCB site is expected to start operating.

1.7 We believe, therefore, that WICS should provide for Scottish Water's expected actual costs on the returning PFI sites – as set out in the forecasts included in our Final Business Plan – until mid-2031 as Scottish Water simply does not have the opportunity to make material savings before then due to historic investment decisions made by our PFI partners. From this date, we believe it would be reasonable for WICS to reduce our operating cost allowance for the returning PFI sites progressively to reflect the cost savings that we expect to be able to achieve from the WCB investment. This would result in a reduction in returning PFI operating costs of £27.1 million over the SR27 period as a whole.

1.8 We note that reducing our operating cost allowance by this amount creates a material financial risk for Scottish Water to manage should the WCB investment be delayed, which makes it even more important that the process of getting agreement for the investment from WICS operates alongside our own governance processes and does not cause hold-ups.

1.9 In this annex, we set out further evidence and argumentation to support our submission that:

- WICS' econometric analysis represents a reasonable approach to identifying a benchmark for the long-run efficient cost of operating the PFI sites that have returned to Scottish Water in the last year and those that will return during the SR27 period. However, this analysis should be taken as indicative of the overall efficient level of costs for a portfolio of assets, and directional in terms of highlighting the sites where a more detailed assessment should be undertaken. We do not believe that the site-by-site estimates are reliable and propose that our detailed assessment of the potential operating cost savings from the WCB investment should form the basis of the efficiency challenge WICS sets;

- Furthermore, the econometric analysis does not provide any sense of the timeline over which an efficient level of costs can be achieved. It should be clear that Scottish Water is locked into the capital design choices of its former PFI partners at the returning PFI sites until such time as it can invest to remodel these sites and achieve the efficient level of operating costs.

[3] By "fully operational", we mean delivering 85ktDS of throughput per year.

Scottish Water should, therefore, be provided with an adequate allowance to cover the unavoidable costs incurred in operating these sites until such time as it is able to transition to a more efficient overall model through investment;

- Scottish Water's estimates of the operating costs of the returning PFI sites, as contained in our Final Business Plan, are consistent with an accurate reading of the evidence from the PFI statutory accounts, while the statistic of opex as c.50% of service PFI fees (+direct costs) is not appropriate to be used as a benchmark to forecast opex for other PFIs as this percentage varies significantly by PFI, being materially affected by both energy cost changes, risk sharing arrangements and the existence in some PFI agreements of service fee tapering provisions. Therefore, the relevant evidence (taken from the statutory account comparisons) demonstrates that our forecast operating costs are as low as can reasonably be expected in the short-term given the asset base that we are inheriting from our PFI-partners;

- Scottish Water's bottom-up estimates are reliable, with further evidence provided to address the concerns that WICS raised in its comments on our Draft Business Plan and in its Draft Determination. These estimates, taking into account the potential savings from WCB, should therefore be used to determine our operating cost allowances for the majority of the SR27 period.

1.10 In response to WICS' comments in the Draft Determination about concerns over the level of maintenance capex spend on the returning PFI sites, we have reviewed this expenditure once again and identified further savings that we believe can be made. Full details of this analysis and those savings are set out in Section 11 of Annex 4b.

2 Benchmarking of PFI Costs Against WASCs in England & Wales

2.1 WICS states that it *"has used both the wastewater 'network plus' models and the bioresources models on an operating expenditure-only basis to generate an efficient benchmark for the operating costs of the returning PFI sites. The efficient benchmark has been calculated to allow for step increases when PFI sites return to Scottish Water to operate."*[4]

2.2 WICS further explains that it has adopted a median benchmark as the appropriate standard to account for both lower confidence in the data inputs and that some of the returning PFI assets will utilise outdated technology, such as sludge driers, compared to more up-to-date assets and technologies, such as advanced anaerobic digestion (AAD) facilities, included in the benchmark.[5]

2.3 WICS states that the difference between Scottish Water's proposed costs and the median benchmark it has adopted is £100 million over SRC27, or an average of £17 million per year.[6]

2.4 We welcome efforts to identify reliable ways of benchmarking Scottish Water's costs against those of companies in England and Wales and examined and made use of a range of approaches in the development of our business plan, including through extensive engagement with WICS. We agree with WICS (as set out in paragraph 6.5.3 of its Draft Determination) that while it is not appropriate to apply such benchmarking mechanistically, it can (when reliable) help provide an overall view of Scottish Water's efficiency. However, as explained further below, in this context, we consider the overall view that is reasonable to reach on the basis of econometric benchmarking to be inevitably relatively high-level, and to highlight the need for other, more in-depth analysis to be taken into account in order to form a reliable assessment.

2.5 Two broad considerations that underpin this view are as follows:

- Ofwat's bioresources models are both relatively simplistic and – given the way in which they take account of energy costs/income – can be highly sensitive to how the balance of energy use and generation for the relevant Scottish Water assets under consideration compares to the average position in England and Wales over the period used for benchmarking. That sensitivity is particularly pronounced because, under Ofwat's approach, energy income is treated as negative opex. Given this, there is a material risk that identified differences in 'efficiency' may, in practice, reflect differences in the underlying composition (in particular, in terms of levels of energy usage and generation) of bioresources assets. While the importance of this type of composition effect may lessen over time, we consider it to be highly relevant over SR27 as the initial configuration (and condition) of the

[4] Draft-Determination-2027-33.pdf, para 6.7.7.
[5] Draft-Determination-2027-33.pdf, para 6.7.8.
[6] Draft-Determination-2027-33.pdf, para 6.7.9.

assets that Scottish Water is taking on will have been determined by the former PFI provider.

- Particular care and caution is merited when seeking to use econometric benchmarking models to assess the efficiency of a particular site. That is, Ofwat typically uses its 'base' econometric models to compare efficiency across a wide range of relevant company activity such that there may be significant scope for particular characteristics of sites that may mean that their efficient costs are higher or lower than average to offset each other (and with the scope for remaining differences to be addressed through the cost adjustment process). Where Ofwat uses econometric benchmarking to help assess the efficiency narrower sets of activities (as, for example, in its enhancement cost benchmarking), careful attention is typically paid to the extent to which there are outliers relative to the econometric benchmark. For such outliers, the assessment of efficient costs will typically be based on the outcome of a 'deep dive' assessment rather than simply on the results of econometric benchmarking.

2.6 The table below shows a breakdown of the results of the returning PFI opex benchmarking analysis that WICS presented in its Draft Determinations. This highlights the extent to which Scottish Water's cost forecasts differ from the benchmark implied by WICS's modelling on a site-by-site basis. It also highlights the extent to which the overall reduction in opex for returning PFI sites that WICS identified as appropriate in its Draft Determinations is driven by Daldowie and Dalmuir (which taken together account for an implied adjustment of £96m).

Table 1: WICS' econometric benchmarking results by site

£m				
SR27 total additional opex				
	SW FBP	**WICS DD**	**Implied WICS adjustment**	**%**
Daldowie	150	114	-36	-24%
Dalmuir	98	38	-60	-61%
AVSE	99	110	11	11%
Tay	27	19	-8	-30%
Moray	11	6	-5	-44%
MSI	6	4	-2	-39%
Total	**391**	**291**	**-100**	**-26%**
Total excl Daldowie & Dalmuir	**143**	**139**	**-5**	**-3%**

2.7 We note that – in indicative and directional terms – we agree with the findings of the WICS econometric benchmarking summarised above. That is, we consider there to be substantial potential for delivering opex reductions at these returning PFI sites over time. However, including for the reasons set out above,

we do not consider the econometric analysis to provide a reliable basis for identifying either:

- The level of opex that it is likely to be appropriate to view as efficient for these PFI sites; or

- The time profile over which improvements are likely to be achievable.

2.8 Rather, in the line with the above, we consider the econometric results to show that deep-dive assessments – in particular for Daldowie and Dalmuir – are required in order to draw reliable conclusions. The scale of the implied efficiency gaps at these sites is an important factor here, because it (rightly) implies that considerable changes will be required in order to materially close them. As set out below, in both cases, that requires significant investments in order to redevelop and reconfigure the asset bases that we will be inheriting, such that what is achievable and when in terms of opex reductions is inevitably linked to views on the appropriate level, form and timing of such investment.

2.9 In line with that, we consider the econometric assessments in the Draft Determination are best seen as an initial screening exercise for SR27, that supports the need for more detailed 'deep-dive' assessments for Daldowie and Dalmuir in particular (and provide further detailed material in line with that below). In line with our comments above, it seems reasonable to expect there to be a greater role that could be usefully played by econometric benchmarking in relation to bioresources in SR33, and we would welcome working with WICS on that in due course.

3 Assessment of Potential Operating Cost Savings: WCB

3.1 Scottish Water has reviewed its business case for WCB, focussing on the forecast operating cost savings from the new site. Our Final Business Plan was based on our project stage 3a Project Investment Appraisal (gate 50). We now have an updated benefits case: Stage 3b Outline Project Appraisal (gate 70), which relates to the preferred Option 3b hybrid gas use.

3.2 Our current best estimate of the operating cost savings that can be achieved as a result of the investment in WCB are set out in Table 2. These were not included in our operating cost estimates in our Final Business Plan due to the uncertainty over the timing of delivering the WCB project – if the timeline slips materially, these savings will not be realised in the SR27 period.

Table 2: Scottish Water assessment of annual operating cost savings & additional revenues from West Central Bioresource project (24/25 prices)

Site / costs	Current opex forecasts (£'000)	Post-WCB net opex forecasts (£'000)	Difference (£'000)	Basis of savings estimate
Daldowie				
Staff costs	Data redacted for publication			Based on staff and contractor reductions across treatment, processing and sludge disposal. FTE & Contractors
Energy				Reduction in electricity bought due to energy provided from Digesters offsetting onsite usage.*
Chemicals				Increase in chemical dosing due to change in process from pellets to digesters, ammonia recovery chemicals, additional poly for higher TDS, anti foam. Current chemical usage is poly to dewater cake for driers
Gas				No gas usage as driers turned off. May have to add propane to export to grid but this may be included in chemicals? Who can confirm?
Recycle				No sludge recycling to land costs.
Maintenance				Increased maintenance costs on new plant and equipment compared with current operations.
Transport				Transport of sludge cake for recycling to land stops with new digesters.
Total	**25,256**	**8,685**	**(17,406)**	
Additional revenue				
Gas	Data redacted for publication			Revenue from sale of gas to grid

Site / costs	Current opex forecasts (£'000)	Post-WCB net opex forecasts (£'000)	Difference (£'000)	Basis of savings estimate
Ammonia				Revenue from sale of ammonia (new market to be developed)
Total revenue		**(3,313)**	**(3,313)**	
Total opex + revenues (net)	**25,256**	**5,372**	**(20,719)**	
Sludge treatment benefits (Dalmuir & Meadowhead)	Data redacted for publication			This is based on an assumed 50% reduction in sludge treatment costs at our Dalmuir and Meadowhead sites
Total annual benefits			**21,719**	

**In its Draft Determination, WICS estimates that Scottish Water will save approximately £11million per year on energy costs once WCB is in operation and generating 77GWh per year. This assessment is based on WICS assuming that only 23GWh out of the 77GWh will go to offset electricity demand at the new WCB leaving 54GWh to sell and fund an equivalent purchase of electricity from the grid. Although the current electricity demand at Daldowie STC is c.23GWh per year, it is expected that the new WCB will process a significantly larger volume and will require 100% of the electricity to be generated on site. Hence, there will be no export of electricity. Furthermore, it is worth noting that when selling electricity to the grid, Scottish Water only obtains the commodity value and not the full grid price (the commodity element currently being c.30% of the grid price).*

3.3 The combination of these operating cost savings and incremental revenue total £21.7 million per year once WCB is fully operational. In terms of achieving this level of saving, we estimate the following transition process:

- We expect to achieve the full gas revenues from August 2031 onwards but we need to develop a market for our ammonia output and we expect that to take some time. Therefore, we believe that it is reasonable to assume that we will achieve no ammonia revenues in 2031/32 and half of the longer-term ammonia revenues in 2032/33, with the full amount earned from 20233/34 onwards;

- For all other cost savings, we expect the full amount to be achieved from August 2031 onwards (assuming the project is not delayed).

On this basis, we estimate that we will achieve total operating cost savings of £27.1 million during the SR27 period, as shown in

3.4 Table 3 below.

Table 3: Summary of SR27 cost savings from WCB investment

Costs / revenues	Savings in 2031/32 (£'m)	Savings in 2032/33 (£'m)	Total Savings (£'m)
Staff costs	Data redacted for publication		
All other opex			
Gas revenues			
Ammonia revenues			
Sludge treatment benefits			
Total	**8.8**	**16.7**	**27.1**

Note: 2031/32 savings estimated on the basis of 7 months of savings achieved in the year.

3.5 We note that WICS' econometric analysis also highlighted the potential for significant operating cost savings at the Dalmuir site. As set out in Schedule 1, the current capital configuration of this site and associated operating model makes it a particular outlier. This is highlighted by the fact that WICS' (econometric) assessment of the potential efficient operating costs of this site are £6.9 million per year. Whereas, to deliver a compliant service, the site currently consumes on an average year energy equating to £4.1m and £3.2m of chemicals, ie £7.3m of direct input costs[7]. This is before any staff, business rates, SEPA fees, sludge disposal or transport costs are taken into account. We believe that this highlights the caution that needs to be taken in interpreting the results of the econometric benchmarking – in particular, we do not believe the efficient cost estimates are reliable at the site level.

3.6 As set out in Schedule 1 to this Annex, we have undertaken a study to understand the opportunity for improving the operational efficiency of our Dalmuir site. This has identified an approximate investment need of £20.3 million in order to achieve operating cost efficiencies of c.£1.9 million per year, giving a payback period of approximately 10 years. This project requires further development before any commitment to invest is made, including considering the trade-offs that would be required in terms of other investment (and associated benefits) foregone, and we do not expect these operating cost savings to be achieved during the SR27 period. As this study highlights (and in contrast to WICS' econometric analysis), we view the opportunity to make savings at this site to be significantly smaller than that at Daldowie / WCB.

[7] Detailed breakdown provided to WICS per WICS Final Business Plan query 02-12.

4 Scottish Water's Operating Cost Forecasts are Reasonable

4.1 The second element of WICS' analysis is a comparison of Scottish Water's operating cost forecasts for the returning PFI assets against the existing PFI fees and the costs of operating these sites as set out in the statutory accounts of the PFI entities. In this respect, WICS notes the following points:

- Scottish Water should make savings versus PFI fees due to, inter alia, not incurring repayment of the financing for the initial capital investment associated with the asset, or interest and profit, and being able to absorb the overhead, management and risk-related costs associated with operating and capital maintenance expenditure on the sites;[8]

- Scottish Water has forecast a 12% reduction in like-for-like operating costs from returning PFI assets;[9]

- Scottish Water has achieved a 50% reduction in total costs from the returning Highland and Aberdeen PFI sites, which suggests that the 12% forecast reduction is not consistent with recent experience;[10]

- WICS' examination of the statutory accounts of the operating company of Daldowie suggests a profit margin of 19% in 2024 and 26% over the eight years from 2017 to 2024. WICS notes that this (profit margin) should represent the reduction in expenditure that Scottish Water observes when the PFI contract expires, and it takes over the operation of that site;[11] and

- Finally, WICS considers that Scottish Water's maintenance expenditure is not well evidenced and may not be proportionate, which it uses to further support its cost challenge to operating expenditure from the return of PFI sites, rather than directly reducing maintenance expenditure. WICS has noted that it will revisit this for its Final Determination. [12]

4.2 We agree with WICS that it is appropriate to benchmark the current operating costs of our returning PFI assets against the operating costs incurred by the PFI entities recently/currently operating these sites. Scottish Water did undertake such benchmarking alongside the detailed operating cost forecasts. However, we believe that WICS' analysis needs to be adjusted to reflect all relevant costs and to take into account the impact of recent growth in energy costs. Once corrected in this way, this analysis indicates that Scottish Water's forecast operating costs are reasonable given the assets that it is inheriting from its PFI partners. In particular:

- WICS Draft Determination Table 54 shows an analysis of the company that Operates Daldowie. WICS has not recognised and included certain

[8] Draft-Determination-2027-33.pdf, para 6.7.11.
[9] Draft-Determination-2027-33.pdf, para 6.7.15.
[10] Draft-Determination-2027-33.pdf, para 6.7.16.
[11] Draft-Determination-2027-33.pdf, para 6.7.18.
[12] Draft-Determination-2027-33.pdf, para 6.7.21.

relevant costs relating to the Daldowie site. These are business rates and sludge system (Shieldhall) centrifuging costs (total £1.04m) which were directly borne by Scottish Water and which are not, therefore, included in the PFI partner's Statutory Accounts. In addition, the PFI partner's Statutory Accounts do not reflect the costs of operating new odour control facilities, which was required from 2024 onwards (£0.3m) plus the changes to sludge outlet costs due to market and EASR regulatory change (£1.6m).[13] Once this is added to the statutory account cost of sales and administrative expenses (£22.4m[14]) this totals £25.4m. This is broadly comparable with Scottish Water's estimate of £24.9m.

- Furthermore, the key feature not acknowledged in WICS analysis is the major increase in costs (above general inflation) in 2022 due to increased energy input costs resulting from Russia's invasion of Ukraine.[15] This is particularly pronounced for Daldowie for which costs are particularly dominated by gas and power but is also reflected in the statutory accounts of other PFI operating companies in proportion to their energy usage as illustrated in Figure 1 below. As WICS has accepted in its review of our baseline operating costs for the SR27 period[16], this increase in energy costs is expected to persist. Comparative analysis of our PFI partners' Statutory Accounts should, therefore, focus on the total costs of sales from 2022 onwards, rather than looking backwards to 2017 when energy costs were lower and/or make an appropriate adjustment for this change.

[13] The costs of pellet disposal have increased by c.£1m per year since expiry of the PFI because a long-term contract with SERL ended and the market price has since increased by this amount.
[14] Daldowie operator statutory accounts cost of sales plus admin expenses but adjusted to remove the depreciation charge that was included from 2023 onwards.
[15] This resulted in an *"£8.2m impairment due to increased energy input costs"* in the 2022 statutory accounts. SMW Ltd (Daldowie Operator) statutory accounts year ended 31 December 2022 page 1 Business Review.
[16] WICS has, in principle, accepted both commodity and non-commodity cost increases (the latter subject to further evidence which we have provided in this response), reflecting changing market prices. These price increases also affect the operating costs of these returning PFI sites and need to be reflected in a reasonable comparison of historic and forecast operating costs.

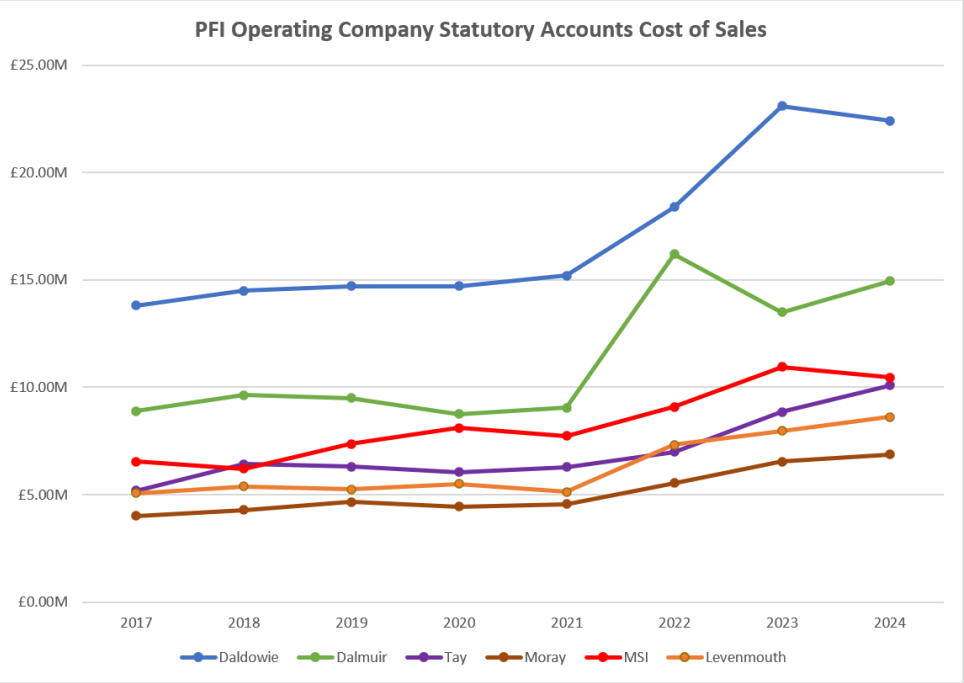


Figure 1: PFI Operating Company Statutory Accounts Cost of Sales

4.3 In Table 4 below, we have carried out this comparative analysis for all sites where Statutory Accounting information is available[17], focussing on the cost of sales in 23/24 or 24/25 (to reflect more recent energy prices) and including costs incurred directly by Scottish Water at these sites.

Table 4: Scottish Water comparison of PFI Statutory Accounts information with our forecast operating costs as included in our Final Business Plan

PFI	Operator cost of sales + admin costs 2024 (£'m) (2023 £m)	Costs incurred by SW directly (£'m)	Other adjustments (£'m)	Total	SW FBP forecast opex (£'m)
Daldowie	22.4 (23.1)	1.0 (business rates & sludge network centrifuging)	1.9 (sludge outlet changes, additional SEPA odour control requirements)	25.4	24.9
Dalmuir	14.9 (13.5)	2.5 (sludge disposal, business rates, SEPA)	0 (0.9 from 2027 Dalmuir sludge disposal changes[18])	17.5	14.4
Tay	10.1 (8.9)	0.1 (rent)	0.1	10.2	8.3

[17] AVSE can not be analysed in this way as it does not have a dedicated operating company.
[18] Dalmuir sludge cake is currently disposed to land reclamation. This outlet is due to run out in 2027 and another outlet is required. This equates to £1.8m across Scottish Water's overall operations with 51% of this associated with Dalmuir Ref Data Table Line 7.3h

PFI	Operator cost of sales + admin costs 2024 (£'m) (2023 £m)	Costs incurred by SW directly (£'m)	Other adjustments (£'m)	Total	SW FBP forecast opex (£'m)
			(sludge disposal)		
Moray	6.9 (6.6)	0.0 (rent)	0.2 (sludge disposal)	7.1	6.4
MSI	10.5[19] (10.9)	1.2 (rates, SEPA)	0	11.6	12.0
Total	**64.8**	**4.8**	**2.2 to 3.1**	**71.6**	**66.0**

4.4 This analysis demonstrates that our forecast operating costs for these sites (in 24/25 prices) are in line with the combined cost of sales and administrative costs incurred by our PFI partners in operating these sites in recent years, adjusted for those costs incurred directly by Scottish Water in relation to these sites. Therefore, we consider that this analysis provides support for our forecasts up until such a time as we are able to invest to reconfigure the sites and achieve a more efficient operating model.

4.5 In addition, we have reviewed WICS' analysis of our forecast operating costs in comparison with the performance of the Highlands and Aberdeen returning PFIs, where Scottish Water has achieved operating cost efficiencies of approximately 50% of the former PFI service fees.

4.6 We concur that the Tier 1 Operating Costs at the former Aberdeen PFI and Highland PFI assets to provide customer service are around 50% of the PFI Service Fees (plus direct Scottish Water costs). However, when applying this benchmark to the other returning PFI sites, WICS analysis does not take into account four relevant factors:

- First, WICS appears to have omitted from their analysis all asset repair, refurbishment and replacement costs. These need to be included if used to calculate a percentage change related to Totex (as shown in WICS Draft Determination Figure 73.) This would add £8.8m in 2023/24 and £15.6m in 2024/25, reducing the apparent reduction in cost.

- Second, the cost impact of the change in energy import costs for Aberdeen and Highland was significantly offset by green energy self-generation of 52% of the demand. This is not reflected for other PFIs with the exception of AVSE. Any projection from Aberdeen and Highland to other PFIs would be materially affected by this difference;

- Third, using the statistic of percentage of service fee (plus direct costs) will be affected by energy price change differently by PFI as these vary

[19] MSI statutory accounts are financial year. All others are calendar year.

significantly in energy price risk share between Scottish Water and the PFI company.

- Fourth, analysis of the PFI Operator Statutory Accounts shows that Totex Cost as a percentage of Service Fee (and direct cost) will vary significantly between PFIs from circa 34% for Tay to circa 86% for Daldowie. This range is due to several factors, including:
  - PFIs with extensive networks (longer life assets associated with lower operating costs) have lower percentages than PFIs dominated by treatment works and shorter life mechanical and electrical equipment;
  - The statistic of Operating Cost (or Totex) as a percentage of PFI Service Fees will also be materially affected by the profit (or loss) of the PFI Company (and their operators) which the statutory accounts show to have significant variation. In addition, some PFIs have sculpted tariffs reducing as the finance element is paid off, which means that this percentage will change over time within a contract and is likely to vary across contracts (some of which have this and some of which do not).

4.7 The impact of these factors are clearly shown in our Annual Return Data (AR25 Table 3e) which estimates operating costs "based on the Concessionaire's financial model adjusted for actual inflation." This similarly shows a Totex Cost as a percentage of Service Fee (and direct cost) with a spread of 40% Tay to 91% Daldowie.

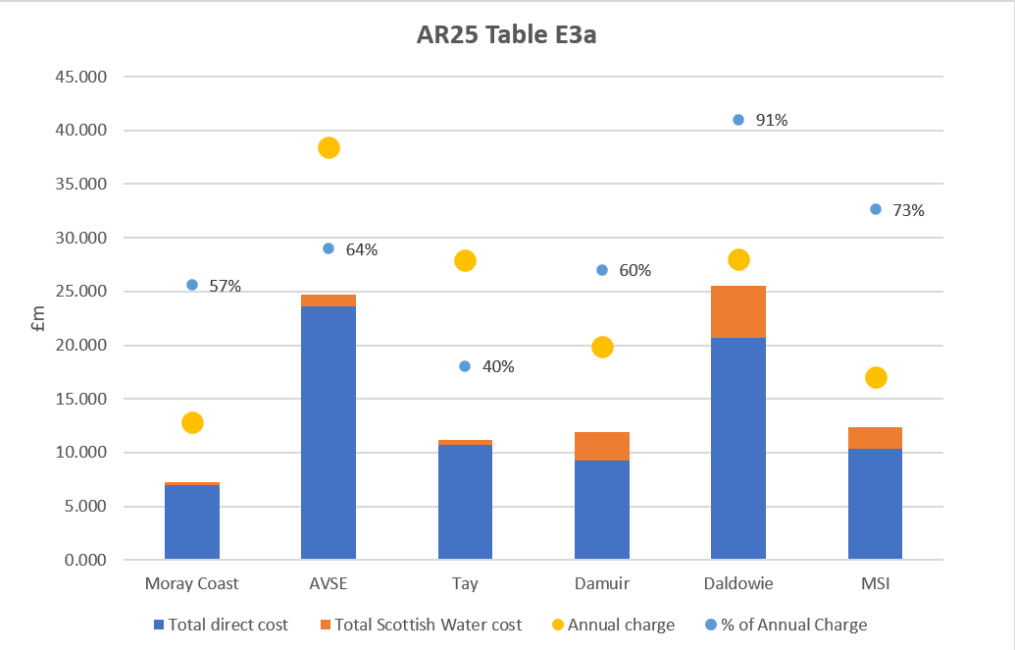


Figure 1: PFI Operating Company Statutory Accounts Cost of Sales Table E3a

4.8 We do not believe, therefore, that the benchmark of (either) operating costs or totex being 50% of the previous PFI service fee is reliable in terms of forecasting what operating costs should be on Scottish Water's returning PFI sites over the SR27 period.

5 Scottish Water's Detailed Operating Cost Forecasts

5.1 WICS reviewed Scottish Water's own detailed operating expenditure forecasts and noted that it does not consider the disaggregated forecasts to be sufficiently robust. In its response to Scottish Water's Draft Business Plan, WICS[20] requested more detail to be provided together with source data and explanations of how this relates to annual return information.

5.2 Scottish Water provided further data in the Final Business Plan[21] together with detailed supporting calculations in response to WICS queries on the Final Business Plan[22]. It is not clear to us what further information WICS would need in order to assure itself of the robustness of our forecasts.

5.3 However, we make the following observations:

- Scottish Water's estimates are based on clear assumptions and market-tested prices for the main cost elements comprising 61% to 75 % of the total costs. For example, power and gas costs are based on volumes from PFI actual usage and current £/kWh tariffs. Chemicals are from PFI actual usage (specific chemical types and volumes) and current costs. Employment costs are from actual numbers of staff (expected to transfer to Scottish Water under TUPE) and costs from statutory accounts (adjusted for vacancies filled by contractors). SEPA charges, rent and rates are known actual costs.

- For other cost elements there is good data for Dalmuir and Daldowie[23] which have already transferred to Scottish Water, but for AVSE, Tay, Moray and MSI a percentage uplift from benchmark data has been applied to cover operational maintenance, operational process, fleet, other utilities plus IT and other overheads. Whilst these have some limited sensitivity to forecasting assumptions, they are broadly in line with the statutory accounts as set out above.

5.4 In WICS' Draft Determination, it expressed concern with Scottish Water assuming a 25% uplift in staff at the Dalmuir site, without providing a clear rationale.[24] This is the only specific query on the estimates received from WICS to date[25] and is simply explained. The Dalmuir operating company had a team structure of 33.5 (full time equivalent) positions. The statutory accounts in 2023 reported on 27 staff and identified employment costs related to this of £1.142m. The vacant positions (primarily in the maintenance team) were being filled by contractors but were not reported under the employment cost category in the

[20] WICS response to Draft Business Plan 4.6.39
[21] Scottish Water Final Business Plan Data Table Commentary 2.1.8 (pages 8 to 16).
[22] WICS query 02-12 - FBP - PFI estimated cost on return summary.xlsx
[23] Scottish Water has detailed cost data from the PFI management accounts for these PFIs from some specific contract risk share and contract expiry mechanisms.
[24] Draft-Determination-2027-33.pdf, para 6.7.23.
[25] Scottish Water queried WICS draft determination requesting any other specific queries to respond to. WICS responded and referred to the queries on the Draft Business Plan.

Statutory Accounts. Importantly, Scottish Water's overall estimate of Operating Costs £14.4m plus AR3 of £3.4m average per year (totex £17.8m) are broadly in line with the Statutory Accounts of the Operating Company (£13.9m in 2024) plus the costs met directly by Scottish Water £2.7m (in AR25) (totex £16.6m).

6 Schedule 1: Dalmuir

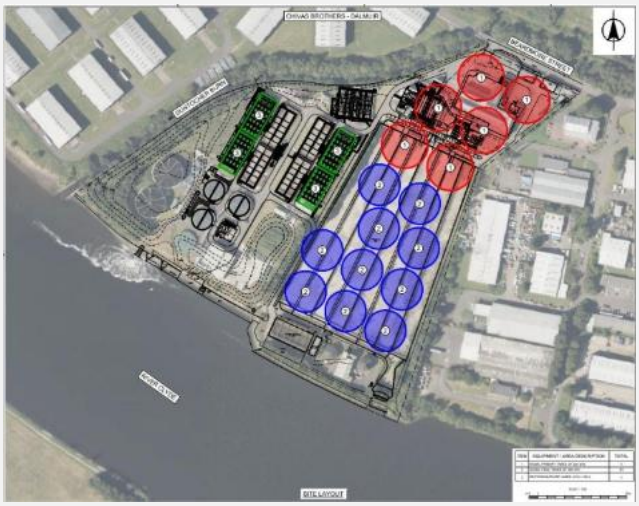
6.1 The late 1990s and early 2000s PFI model of Totex service delivery for a fixed concession period (by design) incentivised private concession companies to behave very differently from the regulated water industry. The PFI response was typically service delivery with a smaller asset base and typically shorter life assets. Performance risk was generally managed with a more intensive and costly Opex input than the regulated equivalent to maintain customer service.

6.2 Dalmuir PFI took a particularly Opex-intensive approach. The novel process design (at the time) resulted in materially smaller process units than a conventional design (see Box 1) but these have never performed as designed. Maintaining compliant service delivery requires significant chemical dosing (over £3m per year), the addition of a tertiary stage of treatment and the consequential impact that around 50% of the sludge (bioresource) produced could not be passed forward to the Greater Glasgow sludge system (due to the high chemical levels) but instead requires centrifuging and removal from site by road to an appropriate outlet. Operating this site, therefore, requires an intensive process led team of operations, maintenance and site laboratory staff.

Box 1 – Dalmuir PFI Wastewater Treatment Works – Comparison with Conventional Design

Dalmuir WWTW was built on a “capital-light” model under the PFI with a process risk transfer. A process engineering comparison has been done with a conventional plant indicated on the site overlay figure. This would include:

- **Activated sludge plant Activated sludge plant** - Build 4 more lanes of identical size and shape indicated green.
- **Primary settlement** – 6 No 52m diameter radial flow tanks – indicated red.
- **Final settlement** – 10 No. 46m diameter radial flow tanks indicated blue.



- Dalmuir maintains SEPA licence compliance but with very high volumes of ferric dosing (125% of the rest of Scottish Water combined) and polyelectrolyte (coagulant aid). The sludge blanket-stability and absence of asset redundancy requires a large process-led operations team and dedicated maintenance team.

- The sludge blanket becomes unstable on flow changes (i.e. rain) with circa 30-45 minute response time including out of hours **alarming and remote control** for frequent process team response.
- The small asset base in relation to conventional treatment comparators is further demonstrated by reference to the asset value (AR25 MEAV). Dalmuir WWTW is compared to the two closest Scottish Water equivalents (by Population Equivalent served, PE). Dalmuir has a similar PE to Shieldhall but only about two-thirds of the asset base. It also has a similar asset value to Daldowie WWTW which has only slightly more than half the PE. Shieldhall WWTW has no chemical dosing and 3.5 FTE Operations team plus 2-5 maintenance FTE (part of an area team). Dalmuir doses over £3m of chemicals per year and has a team of 18 FTE operations and 12 FTE maintenance.

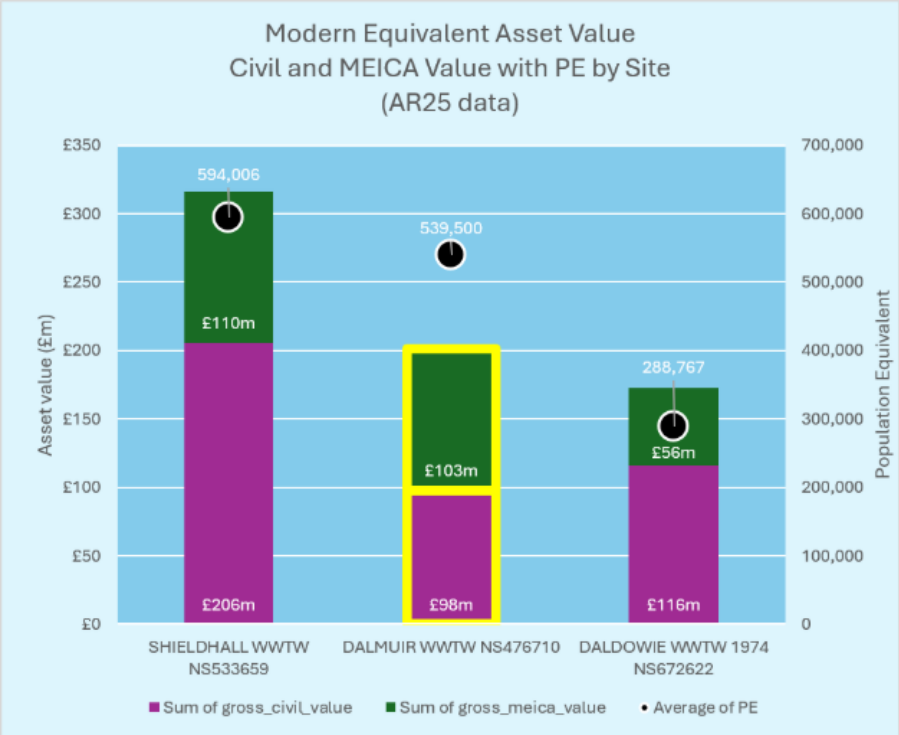


Figure 3: Dalmuir PFI Wastewater Treatment Works – Comparison with Conventional Design

6.3 This is a very unusual capex/opex balance for a site of this nature. However, PFI contracts are very difficult, slow and expensive to change once committed. Scottish Water managed some limited PFI contract change to maintain service during the Concession Period but have developed some post-expiry spend to save retrofit investments in Dalmuir to deliver a more efficient Totex balance. These comprise:

6.3.1 Changing the main treatment process to a Moving Bed Biofilm Reactor (MBBR);

6.3.2 Exploring Flow to Full Treatment reduction, evidenced by 5 years of inlet data which would create energy efficiencies (TBC if viable)

6.3.3 Addressing the bottlenecks in sludge centrifuging.

6.4 This basket of measures would require an investment of indicatively £20.3m to return an annual Opex saving of circa £1.9m per year and a 25-year net saving of £56.2m. Scottish Water's intent is to progress this subject to further project development and business case appraisal. However, the payback period is currently estimated to be around 10 years so would not deliver net savings within the SR27 period.

6.5 It is noted that some operational cost savings at Dalmuir are also part of the business case for West Central Bioresource (WCB) by transferring the bioresource processing and disposal currently carried out at Dalmuir. These savings have been included in our estimates of potential savings set out above.

Annex 5d

Other Operating Cost Adjustments

Contents

1 Summary 3
2 Disallowed Energy Cost Increases 4
3 RBMP3 Additional Chemicals Not Evidenced 10
4 PFI Contract Expenditure Reduction 12
5 Increase in Non-commodity Electricity Costs: Evidence 14
Appendix 1 – RBMP3 Sludge Costs 17
Appendix 2 – Non-commodity Cost Forecasts: 19

1 Summary

1.1 In this annex we set out our assessment of the operating cost ("opex") adjustments included in the Draft Determination in relation to:

- Disallowed increases in energy costs upon Power Purchase Agreement (PPA) expiry;
- Disallowed RBMP3-related chemical and transport costs due to lack of evidence; and
- Indexation of PFI contract costs.

1.2 In addition, we provide the further evidence requested by WICS in relation to the energy non-commodity cost increases that Scottish Water is facing prior to the start of the SR27 period.

1.3 In summary, we believe that WICS should reinstate £26.6 million of costs (24/25 prices) in relation to the three matters set out in point 1.1 above, and should not further disallow any of the energy non-commodity costs referred to in point 1.2.

2 Disallowed Energy Cost Increases

2.1 At the start of the SR21 period, Scottish Water entered a long-term power purchase agreement (PPA) which expires at the end of SR21. This agreement has proved to be a source of significant cost saving with WICS' acknowledging that "*Scottish Water's approach has protected customers from unforeseen cost shocks arising from the rise in electricity costs between 2020-21 and 2024-25.*"[1] However, this PPA comes to an end in 2027, with Scottish Water forecasting a £10 million (circa 12%) annual increase in energy costs from 2027/28 onwards as a result of the business's increased exposure to purchasing energy at prevailing market prices going forward.

2.2 In its Draft Determination, WICS has disallowed £3.5million per year (or £21 million over the SR27 period) in relation to increased energy commodity costs that Scottish Water will incur due to higher market prices. WICS' rationale for this adjustment is that its econometric models which identify the level of efficient operating costs include an implicit allowance for energy costs. WICS considers that only an increase in energy costs in excess of the implicit allowance represents a justifiable cost increase, as any increase up to this level should be funded from the implicit allowance. WICS notes that Scottish Water's energy costs are currently £3.5 million below the implicit allowance and the proposed £10 million increase in 2027-28 would take it to £6.5 million above it. As such, WICS considers that a £6.5 million increase, or £39 million over SRC27, is justified.[2]

2.3 First, we highlight that this adjustment represents an effective catch-up efficiency challenge for Scottish Water, despite WICS' assertion in its Draft Determination that it has not applied any such challenge and that its choice not to apply a catch-up efficiency challenge provides additional support for a higher on-going efficiency challenge.[3]

2.4 Second, we do not agree that WICS' imposition of a catch-up efficiency challenge on operating costs is reasonable for the following reasons:

- The econometric benchmarking results that WICS presented in its Draft Determination (taking into account a special factor adjustment) showed Scottish Water's opex levels to have been materially lower than the upper quartile level during SR21. As set out in Annex 5a, when a more appropriate approach is adopted to taking account of the impact of geographic dispersion on water distribution costs in carrying out the econometric benchmarking, Scottish Water's overall operating costs (taking into account special factors) fall even further below the upper

[1] Draft-Determination-2027-33.pdf, para 6.5.32.
[2] Draft-Determination-2027-33.pdf, para 6.6.12.
[3] For example, WICS states that *"However, our draft decision is not to apply a catch-up efficiency challenge. Instead, we consider that this supports our draft decision to assume a 1% per annum productivity improvement, and it also provides Scottish Water with some capacity to absorb any unexpected cost increases in the period",* Draft-Determination-2027-33.pdf, para 6.5.36.

quartile benchmark than is currently estimated in WICS' analysis, i.e. the business is highly efficient;

- The reasoning which underpins WICS's view in its Draft Determinations that £3.5 million of energy costs should be disallowed each year over SR27 is flawed and does not justify the disallowance. It is based on a mistaken view of how it is appropriate to take account of data on industry average energy costs when interpreting movements in Scottish Water's energy costs. The adjustment in the Draft Determination stems from the observation that the benchmarking undertaken by WICS includes an implicit allowance for energy costs.[4] We note that this part of the WICS assessment can be viewed as consistent with the approach adopted by Ofwat at PR24.[5] However, unlike Ofwat's approach, WICS treats this as though it has direct relevance to the assessment of company-specific energy cost movements over time. WICS states that, for an increase in Scottish Water's forecast energy costs to be justified, that increase would need to be in excess of the implicit allowance provided for by the models.[6] That does not follow, and involves conflating the implications of energy cost movements for the assessment of two quite different things:
    - The modelled efficient benchmark.
    - Scottish Water's forecast levels of opex.

2.5 The WICS comparative energy cost analysis described above indicates that Scottish Water's energy costs in 2027/28 (which are based on an estimate of market prices for energy at that time) will be £6.5 million above the level that is provided for in the efficient benchmark level that WICS identified through its modelling. This does not tell us anything directly about the efficiency or otherwise of Scottish Water's forecast level of energy costs or, more broadly, opex (i.e. ii. above). Rather, it tells us that an efficient Scottish Water would need a higher opex allowance in SR27 than implied by the WICS modelled benchmark (i.e. i. above) because the average energy costs over the (backward-looking) modelling period are lower than the best estimate of likely energy costs in SR27. Rather than indicating some level of opex inefficiency (as implicitly assumed by the WICS analysis), this provides further support for the assessment that it would not be appropriate to apply a catch-up efficiency challenge to Scottish Water's opex (either directly or indirectly by disallowing part of its proposed energy cost increase).

2.6 While energy costs have clearly contributed to Scottish Water's efficiency position over the SR21 period, we do not think it is reasonable to isolate a single cost in this benchmarking and make specific adjustment for that cost without taking into account the "in the round view" of efficiency. Given how low Scottish Water's power costs were in SR21 (compared with the broader market) it is inevitable that the company is going to face more material cost increases in this area than comparator firms will. The key question is whether Scottish Water's

[4] See WICS Draft Determination, para 6.6.11.
[5] Ofwat (2025) PR24 Final Determinations: expenditure allowances, p52-56.
[6] Draft-Determination-2027-33.pdf, para 6.6.11.

forecast increase in energy costs undermines the assessment of its overall opex levels as consistent with (or better than) the upper quartile. As set out further below, our assessment is that it does not, and therefore that it is not appropriate to apply any downward adjustment to the proposed SR27 energy cost increase, because – in line with the comments above – to do so would be to effectively apply a catch-up efficiency challenge in a context where extensive econometric benchmarking analysis has shown that not to be justified.

2.7 The remodelling of opex excluding power costs (using the same explanatory variables) does not justify the application of a catch-up efficiency challenge. This type of analysis has inevitable limitations, because companies will face different features (e.g. in terms of density and topography) and make different trade-offs (for good reasons) that can affect the composition of their opex levels. For example, decisions related to the location of water treatment works can be affected by assessments of the location and quality of potentially available raw water inputs, both of which can impact on the composition of subsequent opex levels: in this example, the balance between energy (given pumping requirements) and chemicals (given treatment requirements) costs. Given this, there is a material risk that the results of analysis of a sub-set of opex (which the modelling opex less power costs is) will reflect factors other than efficiency. As a result, it is appropriate to treat the results of such analysis with some caution.

2.8 In its Draft Determination, WICS finds Scottish Water to be ranked second out of eleven water and sewerage companies (in Scotland, England and Wales) when benchmarked across all opex, with Scottish Water's ranking dropping to fourth out of eleven when opex excluding power costs is modelled. As would be expected, this is consistent with Scottish Water's relatively lower power costs during SR21 having contributed to some extent to its opex efficiency level being better than upper quartile. However, given the inevitable limitations of modelling opex excluding power costs in this way (including because of the potential for composition issues of the kind highlighted above to materially affect the analysis), we do not consider this to provide a reliable basis for concluding that Scottish Water's opex performance has been other than in line with or better than the upper quartile level.

2.9 A projection of how Scottish Water's forecast opex requirements compare with the levels implied by the efficient benchmark levels identified by WICS in its Draft Determination provides further support for the view that Scottish Water's opex levels have been and – on the basis of our plan – would be expected to remain better than the upper quartile level. As set out below, this provides a way of taking account of the impact of Scottish Water's forecast increases in energy costs as part of the broader assessment of opex efficiency, and further highlights why a catch-up efficiency challenge is not justified, including through disallowing a portion of our forecast increase in energy commodity costs (as in the WICS Draft Determination).

2.10 The graph below provides an updated and simplified version of the comparison that we included in the Efficiency Technical Appendix of our Final Business Plan

(which itself was a modified version of analysis WICS included in its feedback on our Draft Business Plan). The benchmark shown in the graph is the sum of the water and wastewater upper quartile levels identified by WICS in its Draft Determination opex modelling (that is, without any adjustment to reflect our views on geographic dispersion and water distribution costs). In line with the WICS Draft Determination, the bars show Scottish Water's actual opex up to 2025 after taking account of a Special Factor adjustment related to small water treatment works. Thereafter, we have included the following changes to opex in line with our business plan: 'Projected changes due to 25/26 forecast and 26/27 forecast'; energy commodity cost increases (i.e. £10million uplift from 2027/28 onwards); chemicals costs; and increase related to growth (etc.). We have not included other increases (including energy non-commodity cost increases, impacts from changes to national insurance and increased bad debt costs) where no account would be expected to have been taken of them in the baseline (either because of the time period to which the dataset relates, or because of the (e.g. wholesale) scope of the modelling).

2.11 Up to 2025, the graph aligns with that shown in Figure 61 of the Draft Determination, and is clearly consistent with Scottish Water's opex levels having been in line with or better than the upper quartile level across SR21. The forward-look is helpful to consider as it puts Scottish Water's proposed £10m increase in energy commodity costs from 2027/28 onwards in the context both of Scottish Water's overall opex levels, and of the efficient benchmark implied by the Draft Determination models. As shown in the graph, Scottish Water's level of modelled opex remains lower than the upper quartile benchmark level implied by the WICS Draft Determination modelling after all of the relevant opex additions included in our Final Business Plan – including the £10million forecast increase in energy commodity costs – have been added.

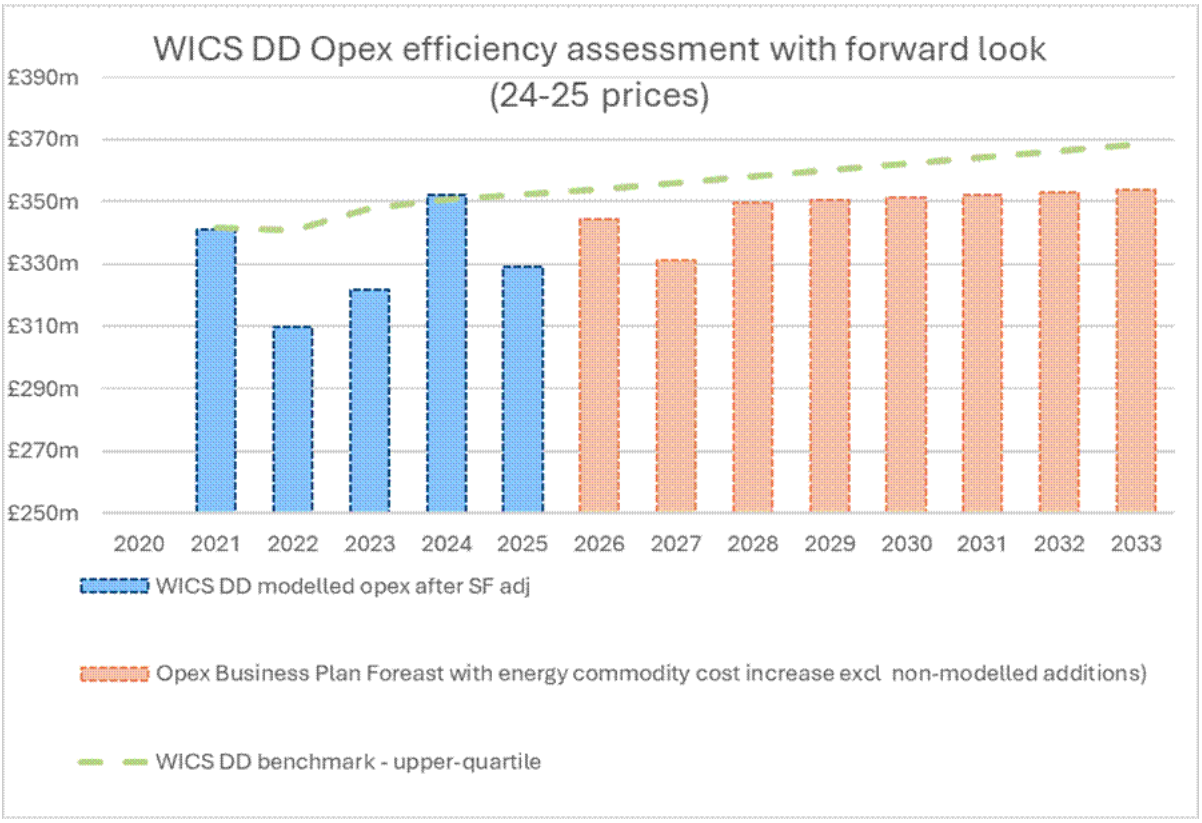


Figure 1: WICS DD Opex Efficiency Assessment with Forward Look

2.12 We note that the position shown in the graph above can be viewed as conservative in a number of ways:

a. As set out in Annex 5a, we consider it appropriate to take account of the effect of geographic distribution on Scottish Water's efficient treated water distribution costs through an additional special factor adjustment (if this factor is not to be addressed adequately in the modelling through the use of more appropriate density measures). This would have the effect of slightly increasing the upper quartile benchmark.

b. In line with our comments above, the WICS assessment of the extent to which there is an implicit allowance for energy costs within the upper quartile benchmark would imply that the upper quartile benchmark in the graph should be uplifted by around £6.5million from 2027-28 onwards. This follows because – on WICS's analysis – only £3.5million of the forecast increase (of £10million) is allowed for implicitly in the upper quartile benchmark shown in the graph above.

c. The increase in chemicals costs that were forecast in our plan are included in the bars in the graph above. However, as WICS noted in its Draft Determination, these costs relate to phosphorus removal requirements, and at PR24, Ofwat included an explicit upward cost adjustment to take account of additional phosphorus removal opex impacts. This implies that the some degree of uplift to the upper quartile benchmark would be appropriate in the above comparison.

2.13 Therefore, we propose that WICS should provide full allowance for the £10 million forecast increase in energy costs from 2027-28. This level of proposed allowance is inevitably based on a forecast of energy prices. WICS could take account of this by treating the £10million increase as an up-front energy RPE adjustment, which could then be revisited during SR27 by reference to an appropriate energy price index.

3 RBMP3 Additional Chemicals Not Evidenced[7]

3.1 In its Draft Determination, WICS has disallowed £0.72 million of our proposed £7.7 million increase in operating costs resulting from the new requirements set out in the third River Basin Management Plan.[8] WICS' explained that this £0.72 million of costs relating to sludge treatment was hard-coded in our model (£750k in 25/26 prices) and not otherwise well explained.

3.2 In response to WICS' challenge in this area, we have reviewed the relevant underlying model and have produced revised cost estimates, as well as additional supporting evidence. Our revised forecasts are set out in Table 1 below. We highlight that our cost forecasts in this area have increased (from £750k to £1.2 million per year) as a result of producing more granular transport cost estimates. This will be partly offset by a reduction in cost estimate for the PAC chemical (reduced cost to 53p per litre, saving £340k compared to the FBP). We therefore do not propose an increase in the allowance above that requested in the Final Business Plan. The supporting calculations are set out in Appendix 1 to this Annex.

Table 1: Breakdown of additional annual chemical costs (RBMP3)

Cost element	Unit cost	Volume (TDS[9])	Cost £k	Explanation / description
Transport costs to STC	£192 / TDS	2,679	515	This is the cost of transporting sludge from the relevant treatment works to sludge treatment centres (STCs). See appendix 1 for breakdown.
STC intermediate treatment costs	£245 / TDS	1,275	313	Incremental costs of treatment for a proportion of sludge
Transport of STC product to recycling/disposal	£6 / TDS	366	37	Transport of the final product between the STC and its final destination where different.
Costs to recycle/dispose	£117 / TDS	2,679	313	The costs of disposing or recycling the end sludge product
TOTAL transport/treatment COST per annum			**1,178**	
Offset in chemical costs			(340)	
Net additional evidence result			**838**	This is the latest estimate of the incremental cost net of chemical reduction
Hard-coded figure previously provided			750	**The additional figure as submitted**

3.3 These costs are incremental and will be suffered as a consequence of RBMP3 compliance.

[7] This is set out in the Draft Determination at paragraphs 6.6.17 to 6.6.20.
[8] See Draft Determination, para 6.6.18.
[9] Tonnes of dried solid

3.4 Whilst the actual increase is slightly larger we only ask for reinstatement of the previously calculated costs, adjusted for the inflation in the current model, on the basis of the additional evidence provided, which was previously missing. In 24/25 prices this leads to the following:

Table 2: RMBP3 Operating Costs

	24/25 Prices (m)
Final Business Plan	**£7.742**
Draft Determination	**£6.984**
SW Response	**£7.709**

4 PFI Contract Expenditure Reduction

4.1 In Section 6.8 of its Draft Determination, WICS has made an adjustment to Scottish Water's assumed Opex costs for the remaining PFI contracts during the SR27 period. This adjustment has been made on the basis that Scottish Water's PFI contracts are indexed to RPI inflation which will be aligned with CPIH inflation from 2030 onwards. WICS has stated that CPIH is "typically around 1.0% below the RPI measure and is broadly similar to CPI" and that it has, therefore, assumed that PFI contract inflation is in line with the Bank of England target level for CPI of 2.0% in the latter years of the SRC27 regulatory period where detailed forecasts from the Office for Budget Responsibility are not available.[10]

4.2 We do not agree that WICS' approach in this respect is reasonable due to the structural "wedge" that exists between CPI and CPIH inflation. In particular, we highlight the OBR's statement that:

In the future, movements in RPI will be aligned with the consumer price index including owner occupiers' housing costs (CPIH), which has been the ONS's lead measure of consumer price inflation since March 2017. CPIH is identical to CPI, except that it also includes owner occupier housing costs (OOH) and council tax, which are significant expenses for many households… To [forecast CPIH] …, we combine our CPI inflation forecast with our council tax and OOH forecasts… we expect CPIH (and hence RPI) inflation to be around 2.4 per cent a year in the long run. This results in an estimated wedge between CPIH/RPI and CPI inflation of around 0.4 percentage points.[11]

4.3 In addition, we note the CMA's approach in the PR24 redetermination in which it highlighted that, in coming to a view on the appropriate CPIH assumption, it considered the following principles to be important.

(a) In a regulatory context, it is appropriate to rely on official inflation forecasts and/or market-derived inflation forecasts (if available).

(b) Until the last few years, inflation has been relatively stable, with actual inflation rarely deviating from long-term targets. Therefore, it was reasonable to assume that any variations in inflation from the long-term target would broadly balance out over multiple price controls, and it was reasonable to 'look through' short-term fluctuations in inflation when estimating long-term inflation.[12]

4.4 The CMA concluded that *the most objective and fair approach* to setting an CPIH assumption is to use the only available long-term CPIH forecast of 2.4%.[13] We believe that WICS should adopt this same approach and increase Scottish Water's operating cost allowance on PFI contracts by 2.4% per year from 2030.

[10] See Draft Determination, para 6.8.3.
[11] See OBR Economic and fiscal outlook – CP 1169, pages 38-39.
[12] See Determinations volume 4: allowed return - chapter 7, para 7.83.
[13] See Determinations volume 4: allowed return - chapter 7, para 7.104.

4.5 Based on CPIH inflation of 2.4% from 2030/31 onwards we assess that the total PFI contract expenditure will be £435.7m.

Table 3: PFI Contract Expenditure Allowance in SRC27

	PFI contract expenditure allowance in SRC27 (£m; 2024-25 prices)
Scottish Water's final business plan	439.1
WICS Draft Determination	434.9
Scottish Water's response to DD	435.7
Difference to DD	0.8

5 Increase in Non-commodity Electricity Costs: Evidence

5.1 In section 6.6.8 of the Draft Determination, WICS highlighted that Scottish Water had not provided evidence to support the £8million per year increase in energy non-commodity costs that we included in our Final Business Plan.

5.2 We apologise for our failure to provide the requested information previously and set out that information in this section.

5.3 Non-commodity costs (NCC) in recent years have been subject to some volatility, but on a generally increasing profile, as shown in Figure 2.

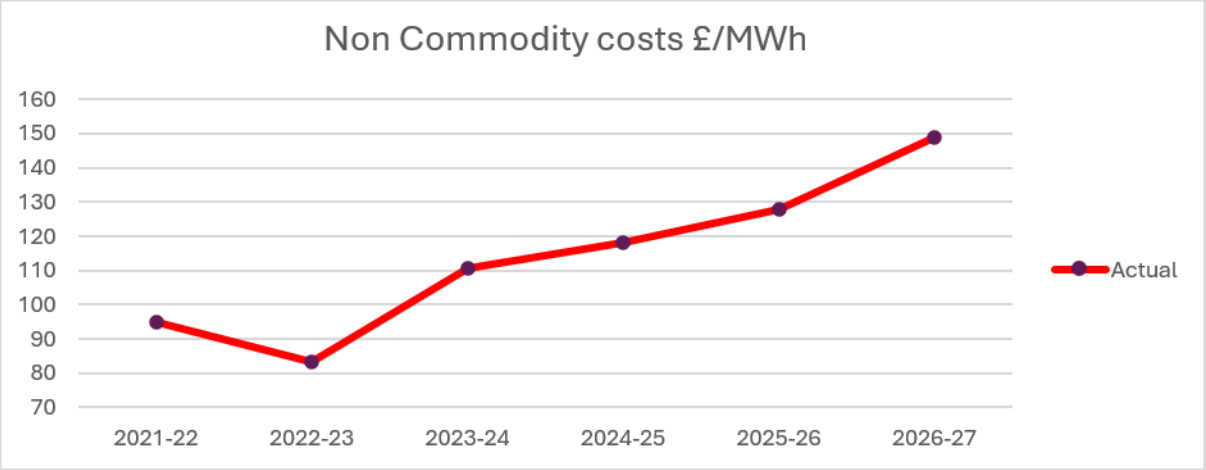


Figure 2: Non Commodity Energy Costs

5.4 NCC is also subject to change during a year and as a result we see quite a wide range of forecast values from our providers. For that reason, our long-term practice for budgeting and planning has been to obtain low, mid and high forecasts from two different external advisers. We take the average of all forecast points to determine our planning assumption.

5.5 The 26-27 forecasts underpinning the Final Business Plan submissions are set out in **Error! Reference source not found.**.

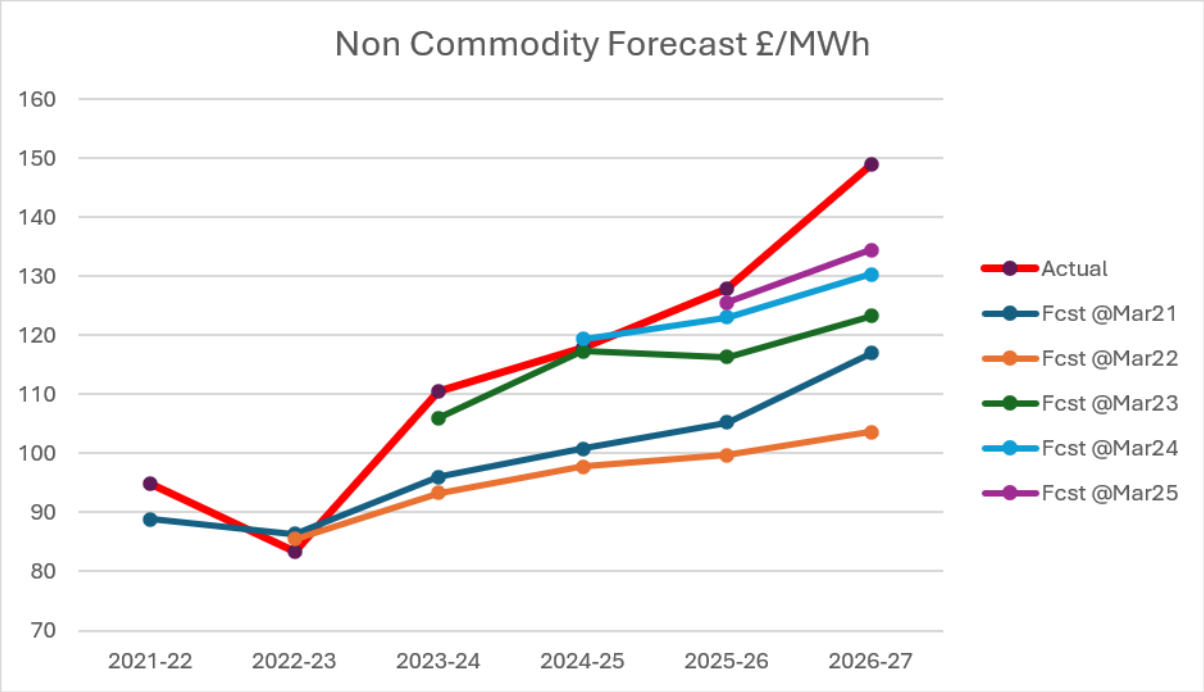


Figure 3: Comparison of forecast and actual non-commodity costs, 2021-22 to 2026-27

5.6 Examining our average historic forecasts from the providers, they have generally tracked well in the short-term, underestimating the longer term, as shown in Figure 2.

5.7 The average provided for the year of £152 is materially consistent with our current actual billing experience, with our provider (nPower) estimating an NCC at this point in the year of £149, subject to true-ups at year-end.

5.8 Costs are subject to true-up due to their nature – they are largely made up of regulated network charges, balancing costs and government policy levies that are periodically reset. Charge elements depend on the national electricity system operating conditions and commodity prices in the year. There have also been government policy changes mid-year, for example the Nuclear levy.

5.9 If we compare this forecast price times expected consumption to the prior year (25-26) actual cost, we see the following:

Table 4: Forecast Price Times Expected Consumption

25/26 Actual			26/27 Expected			Difference
£/MWh	MWh	Total NCC	£/MWh	MWh	Total NCC	
c.128	450,990	£57.6m	c.152	434,608	£65.9m	£8.3m

5.10 The main drivers of the increase are increases to:

- The Transmission Network Use of Systems (TNUoS) costs driven by infrastructure investments for the transition to renewable energy; and

- Capacity Market costs, linked to higher prices at capacity market auctions to secure system reliability in tighter capacity conditions.

5.11 The £8.3m increase, expressed in 24/25 prices is the £7.9m increase provided in the Final Business Plan.

5.12 Please see Appendix 2 for the forecasts used.

Appendix 1 – RBMP3 Sludge Costs

For each site, the current transport framework rate costs to primary treatment were obtained and applied to the incremental sludge volume. This generates a transport cost of £515k in 25/26 prices. The unit costs per site vary considerably, with distance travelled the principal driver.

Table 5: RBMP3 sludge costs

Site	Ops TL	sludge (TDS) / Yr	%DS	M3	Loads		Size	or Rate Type	Contractor Rate £/M3	Cost Per Load £	Services Liquid Cost (£)
Blackburn PFI	Susan Rowe	138	-								
Bonnybridge	Allan Jenkins	31	3.0%	1033	37	Kinneil Kerse	28	Per M3	5.27	148	5,463
Bothwellbank	Craig Causer	46	2.9%	1586	57	Daldowie	28	Per M3	4.86	136	7,753
Bowhouse	Greg Russell	27	2.0%	1350	49	Cupar	28	Per M3	7.56	212	10,368
Ceres	Greg Russell	10	1.7%	588	33	Cupar	18	Ad-Hoc		243	8,015
Coursington	Stevie Heatley	45	2.8%	1607	58	Daldowie	28	Per M3	4.25	119	6,895
Cupar	Greg Russell	63	1.3%	4846	174	Perth	28	Per M3	8.64	242	42,075
Denny	Allan Jenkins	19	2.7%	704	26	Kinneil Kerse	28	Per M3	5.27	148	3,839
Dunnswood	Craig Causer	64	2.3%	2783	100	Daldowie	28	Per M3	4.42	124	12,381
East Calder PFI	Susan Rowe	661	-								
Fauldhouse	Neal Legowski	34	1.7%	2000	143	Kinneil Kerse	14	Per M3	8.27	116	16,562
Forfar	Paul Gary	182	0.8%	22750	813	Hatton PFI	28	Per M3	6.37	178	145,082
Freuchie	Greg Russell	10	1.0%	1000	72	Cupar	14	Ad-Hoc		243	17,487
Gorebridge	Neal Legowski	45	2.6%	1731	97	Prestonpans	18	Per M3	8.10	146	14,136
Hareshaw	Craig Causer	1	2.7%	37	3	Shieldhall	18	Per M3	6.54	118	353
Harthill	Craig Causer	20	2.7%	741	27	Daldowie	28	Per M3	5.50	154	4,159
Killearn	George O'Sullivan	17	2.0%	850	61	Ardoch	14	Ad-Hoc		243	14,816
Lesmahagow	Stevie Heatley	55	2.4%	2292	82	Daldowie	28	Per M3	5.86	164	13,465
Letham Fife	Greg Russell	3	2.0%	150	6	Hatton PFI	28	Ad-Hoc		243	1,457
Livingston	Neal Legowski	48	3.6%	1333	48	Kinneil Kerse	28	Per M3	5.32	149	7,157
Longriggend Upperton	Craig Causer	5	0.5%	1000	72	Daldowie	14	Ad-Hoc		243	17,487
New Pitsligo	Jorge Norrie	3	2.0%	150	11	Peterhead	14	Per M3	7.92	111	1,220
Persley	Heather Morris	237	-			Nigg STC					
Philipshill	Craig Causer	678	3.1%	21871	782	Daldowie	28	Per M3	4.68	131	102,503
Pitmedden	Eric Davidson	3	2.0%	150	11	Peterhead	14	Per M3	8.83	124	1,360
Salsburgh	Craig Causer	11	2.5%	440	32	Daldowie	14	Ad-Hoc		243	7,772
Shotts	Craig Causer	95	3.0%	3167	114	Daldowie	28	Per M3	5.68	159	18,124
Springfield	Greg Russell	36	2.9%	1241	45	Dunfermline	28	Per M3	9.72	272	12,242
Stonehouse	Stevie Heatley	40	2.0%	2000	143	Daldowie	14	Per M3	8.10	113	16,209
Strathblane	George O'Sullivan	15	2.9%	517	19	Shieldhall	28	Per M3	6.37	178	3,391
Strathmiglo	Greg Russell	3	2.5%	120	9	Cupar	14	Ad-Hoc		243	2,186
Swinstie	Stevie Heatley	5	3.0%	167	6	Daldowie	28	Per M3	4.79	134	804
Whitburn PFI	Susan Rowe	29	-								
Annual Increase		**2,679** TDS / yr			3,130						**514,762**

Then, intermediate treatment costs (where applicable), the costs of transporting the cake to the relevant recycling site and the subsequent gate fee or recycling site costs were also captured. This gives an additional cost of £663k for a total cost of £1,178k per annum, in 25/26 prices.

Table 6: Costs

STC	Sum of TDS	Estimated Cake %DS	Estimated Treatment costs per TDS	Estimated Treatment Costs	Estimated Cake Volume (wet T)	Average Weight per load	Loads	Cost per load (to primary outlet)	Transport Cost	Gatefee/Recycling Costs per wet T	Recycling Costs	Total Additional Costs
AVSE	828	23.0			3600.0					£130.00	£107,640	**£107,640**
Ardoch	17											
Cupar	50	18.2			274.3	13.5	20.3	453.7	£9,220	£29.16	£8,000	**£17,220**
Daldowie - pellets	806	90	£259	£208,745	895.6	24.9	36.0		£0	£32.00	£28,658	**£237,402**
Daldowie - cake	274	24	£259	£70,963	1141.7	13.0	87.8	233	£20,462	£62.00	£70,783	**£162,208**
Dunfermline	36	19.6			183.6	14.5	12.7	543.3	£6,878	£0.00	£0	**£6,878**
Hatton PFI	185	23.0			804.3					£253.89	£46,970	**£46,970**
Kinneil Kerse	132	26.9	£168	£22,227	491.5					£31.00	£15,237	**£37,465**
Perth	63	22.9	£178	£11,203	275.7					£17.30	£4,770	**£15,973**
Peterhead	6	22.3			26.9	25.0	1.1	298.9	£322	£0.00	£0	**£322**
Prestonpans	45	23.0			195.7					£130.00	£5,850	**£5,850**
Shieldhall	0										£0	
Nigg STC	237	18.0			1316.7	14.5	90.8			£19.67	£25,899	**£25,899**
Grand Total	**2,679**											**£663,827**

Appendix 2 – Non-commodity Cost Forecasts:

Advisor 1

Table 7

Cost component (£/MWh) – CENTRAL	Year 2025-2	Year 2026-2	Year 2027-2	Year 2028-2	Year 2029-3	Year 2030-3	Year 2031-3	Year 2032-3	Year 2033-3	Year 2034-3	Year 2035-36
	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal
Transmission losses	-£0.95	-£0.92	-£0.92	-£0.92	-£0.96	-£0.92	-£0.93	-£0.93	-£0.92	-£0.91	-£0.91
Distribution losses	£5.82	£5.64	£5.62	£5.63	£5.87	£5.62	£5.72	£5.67	£5.60	£5.55	£5.58
TNUoS	£10.72	£20.80	£23.94	£27.01	£28.44	£29.62	£30.51	£31.42	£32.37	£33.34	£34.34
BSUoS	£14.26	£13.88	£15.22	£22.23	£20.91	£30.01	£14.00	£17.36	£21.92	£15.87	£11.75
Imbalance (Elexon)	£0.41	£0.41	£0.41	£0.41	£0.41	£0.41	£0.41	£0.41	£0.41	£0.41	£0.41
AAHEDC	£0.51	£0.47	£0.47	£0.47	£0.46	£0.45	£0.44	£0.43	£0.43	£0.42	£0.42
DUoS	£29.99	£29.71	£33.60	£33.17	£33.94	£34.58	£35.23	£35.90	£36.59	£37.28	£37.99
Renewables Obligation	£33.06	£34.38	£31.14	£30.52	£29.57	£28.45	£25.62	£22.94	£18.17	£15.99	£11.31
Feed-in Tariffs	£7.49	£7.67	£7.74	£7.75	£7.68	£7.61	£7.44	£6.67	£5.51	£4.95	£4.26
Climate Change Levy	£7.75	£8.01	£8.20	£8.37	£8.54	£8.72	£8.90	£9.09	£9.28	£9.47	£9.76
EMR (FIT CfD)	£8.93	£8.69	£9.77	£10.88	£16.91	£25.12	£27.87	£29.44	£31.24	£33.10	£34.89
Capacity Mechanism (CM)	£7.48	£13.61	£13.71	£12.89	£13.16	£13.23	£13.25	£13.24	£13.19	£13.19	£12.95
RAB Charge	£3.48	£3.98	£3.99	£3.98	£3.92	£3.87	£3.81	£3.75	£3.70	£3.67	£3.65
EII Support Levy	£0.78	£1.20	£1.23	£1.24	£1.24	£1.22	£1.20	£1.19	£1.17	£1.15	£1.14
Supplier Margin	£0.30	£0.30	£0.30	£0.30	£0.30	£0.30	£0.30	£0.30	£0.30	£0.30	£0.30
Total Third Party (B) @Meter	*£130.62*	*£147.81*	*£154.42*	*£163.31*	*£170.37*	*£188.28*	*£173.78*	*£176.88*	*£178.34*	*£173.80*	*£167.82*

Cost component (£/MWh) – LOW											
	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal
Transmission losses	-£0.73	-£0.71	-£0.71	-£0.71	-£0.74	-£0.71	-£0.72	-£0.71	-£0.70	-£0.70	-£0.70
Distribution losses	£4.48	£4.34	£4.33	£4.33	£4.52	£4.33	£4.41	£4.36	£4.32	£4.28	£4.29
TNUoS	£10.72	£13.78	£15.56	£17.26	£17.91	£18.16	£18.59	£19.03	£19.48	£19.95	£20.42
BSUoS	£14.26	£13.88	£15.22	£22.23	£20.91	£30.01	£14.00	£17.36	£21.92	£15.87	£11.75
Imbalance (Elexon)	£0.41	£0.41	£0.41	£0.41	£0.41	£0.41	£0.41	£0.41	£0.41	£0.41	£0.41
AAHEDC	£0.51	£0.47	£0.47	£0.47	£0.46	£0.45	£0.44	£0.43	£0.43	£0.42	£0.42
DUoS	£29.99	£29.71	£32.72	£32.38	£33.29	£33.79	£34.30	£34.82	£35.35	£35.88	£36.42
Renewables Obligation	£33.06	£29.72	£25.22	£23.86	£22.29	£20.55	£17.16	£13.94	£8.63	£5.88	£0.62
Feed-in Tariffs	£6.81	£6.97	£7.04	£7.05	£6.98	£6.92	£6.76	£6.06	£5.01	£4.50	£3.88
Climate Change Levy	£7.75	£8.01	£8.20	£8.37	£8.54	£8.72	£8.90	£9.09	£9.28	£9.47	£9.76
EMR (FIT CfD)	£7.03	£5.46	£5.76	£5.95	£10.43	£17.08	£19.96	£21.80	£23.84	£25.88	£27.80
Capacity Mechanism (CM)	£6.80	£12.38	£12.46	£11.72	£11.96	£12.03	£12.05	£12.04	£11.99	£11.99	£11.77
RAB Charge	£3.48	£3.98	£3.99	£3.98	£3.92	£3.87	£3.81	£3.75	£3.70	£3.67	£3.65
EII Support Levy	£0.78	£1.20	£1.23	£1.24	£1.24	£1.22	£1.20	£1.19	£1.17	£1.15	£1.14
Supplier Margin	£0.30	£0.30	£0.30	£0.30	£0.30	£0.30	£0.30	£0.30	£0.30	£0.30	£0.30
Total Third Party (B) @Meter	*£125.64*	*£129.89*	*£132.18*	*£138.83*	*£142.41*	*£157.12*	*£141.57*	*£143.86*	*£145.10*	*£138.96*	*£131.92*

Cost component (£/MWh) – HIGH	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal
Transmission losses	-£1.21	-£1.17	-£1.17	-£1.17	-£1.22	-£1.17	-£1.19	-£1.18	-£1.17	-£1.16	-£1.16
Distribution losses	£7.43	£7.19	£7.18	£7.18	£7.49	£7.17	£7.30	£7.23	£7.15	£7.09	£7.12
TNUoS	£10.72	£22.29	£25.95	£29.52	£31.22	£32.64	£33.82	£35.04	£36.31	£37.62	£38.98
BSUoS	£14.26	£13.88	£15.22	£22.23	£20.91	£30.01	£14.00	£17.36	£21.92	£15.87	£11.75
Imbalance (Elexon)	£0.41	£0.41	£0.41	£0.41	£0.41	£0.41	£0.41	£0.41	£0.41	£0.41	£0.41
AAHEDC	£0.51	£0.47	£0.47	£0.47	£0.46	£0.45	£0.44	£0.43	£0.43	£0.42	£0.42
DUoS	£29.99	£29.71	£34.49	£33.95	£34.90	£35.69	£36.51	£37.34	£38.20	£39.07	£39.96
Renewables Obligation	£33.06	£39.97	£37.06	£37.18	£36.84	£36.35	£34.09	£31.94	£27.71	£26.11	£22.01
Feed-in Tariffs	£8.32	£8.52	£8.60	£8.61	£8.53	£8.46	£8.27	£7.41	£6.12	£5.50	£4.74
Climate Change Levy	£7.75	£8.01	£8.20	£8.37	£8.54	£8.72	£8.90	£9.09	£9.28	£9.47	£9.76
EMR (FIT CfD)	£10.78	£11.83	£13.68	£15.66	£23.20	£32.93	£35.57	£36.87	£38.45	£40.14	£41.81
Capacity Mechanism (CM)	£8.23	£14.98	£15.08	£14.18	£14.48	£14.55	£14.58	£14.56	£14.50	£14.51	£14.24
RAB Charge	£3.48	£3.98	£3.99	£3.98	£3.92	£3.87	£3.81	£3.75	£3.70	£3.67	£3.65
EII Support Levy	£0.78	£1.20	£1.23	£1.24	£1.24	£1.22	£1.20	£1.19	£1.17	£1.15	£1.14
Supplier Margin	£0.30	£0.30	£0.30	£0.30	£0.30	£0.30	£0.30	£0.30	£0.30	£0.30	£0.30
Total Third Party (B) @Meter	***£134.80***	***£161.55***	***£170.67***	***£182.03***	***£191.20***	***£211.53***	***£198.00***	***£201.74***	***£204.47***	***£200.17***	***£195.11***

Advisor 2:

Table 8

Cost component (£/MWh) - CENTRAL	Year 2025-2026 Nominal	Year 2026-2027 Nominal	Year 2027-2028 Nominal	Year 2028-2029 Nominal	Year 2029-2030 Nominal	Year 2030-2031 Nominal	Year 2031-2032 Nominal	Year 2032-2033 Nominal	Year 2033-2034 Nominal	Year 2034-2035 Nominal	Year 2035-2036 Nominal
Transmission losses	-£0.96	-£0.92	-£0.88	-£0.85	-£0.85	-£0.84	-£0.85	-£0.90	-£0.94	-£1.00	-£1.05
Distribution losses	£5.25	£4.99	£4.77	£4.63	£4.60	£4.55	£4.62	£4.87	£5.13	£5.41	£5.70
TNUoS	£10.33	£21.13	£25.06	£29.50	£32.62	£35.87	£37.66	£39.54	£41.52	£43.60	£45.78
BSUoS	£13.92	£13.47	£14.07	£14.56	£15.07	£15.18	£15.59	£16.60	£17.67	£18.81	£20.03
Imbalance (Elexon)	£0.76	£0.76	£0.76	£0.76	£0.76	£0.76	£0.76	£0.76	£0.76	£0.76	£0.76
AAHEDC	£0.44	£0.45	£0.46	£0.47	£0.48	£0.49	£0.50	£0.51	£0.52	£0.53	£0.54
DUoS	£27.94	£27.69	£28.54	£28.65	£29.22	£29.81	£30.40	£31.01	£31.63	£32.27	£32.91
Renewables Obligation	£33.06	£34.47	£27.84	£27.68	£27.51	£26.96	£26.42	£25.89	£25.38	£24.87	£24.62
Feed-in Tariffs	£8.36	£8.45	£8.53	£8.62	£8.70	£8.79	£8.88	£8.97	£9.06	£9.15	£9.24
Climate Change Levy	£7.75	£8.01	£8.17	£8.33	£8.50	£8.67	£8.84	£9.02	£9.20	£9.38	£9.57
EMR (FIT CfD)	£11.07	£12.00	£14.83	£15.27	£18.99	£20.39	£21.25	£21.37	£21.49	£21.62	£21.74
Capacity Mechanism (CM)	£6.82	£13.48	£13.63	£15.15	£15.90	£16.46	£17.04	£17.63	£18.25	£18.89	£19.55
Nuclear RAB	£2.46	£4.26	£4.36	£4.46	£4.57	£4.73	£4.89	£5.05	£5.22	£5.40	£5.59
Ell Support Levy	£1.05	£1.52	£1.96	£2.02	£2.08	£2.15	£2.22	£2.30	£2.38	£2.46	£2.55
Supplier Margin	£0.31	£0.31	£0.31	£0.31	£0.31	£0.31	£0.31	£0.31	£0.31	£0.31	£0.31
Total Third Party (B)	***£128.55***	***£150.05***	***£152.41***	***£158.57***	***£168.47***	***£174.27***	***£178.54***	***£182.95***	***£187.58***	***£192.46***	***£197.83***

Cost component (£/MWh) - LOW	Year 2025-2026 Nominal	Year 2026-2027 Nominal	Year 2027-2028 Nominal	Year 2028-2029 Nominal	Year 2029-2030 Nominal	Year 2030-2031 Nominal	Year 2031-2032 Nominal	Year 2032-2033 Nominal	Year 2033-2034 Nominal	Year 2034-2035 Nominal	Year 2035-2036 Nominal
Transmission losses	-£0.89	-£0.78	-£0.74	-£0.72	-£0.72	-£0.71	-£0.72	-£0.76	-£0.80	-£0.85	-£0.89
Distribution losses	£4.86	£4.24	£4.05	£3.93	£3.91	£3.86	£3.93	£4.14	£4.36	£4.59	£4.84
TNUoS	£10.12	£20.07	£22.56	£25.08	£27.72	£28.69	£30.13	£31.63	£33.22	£34.88	£36.62
BSUoS	£13.64	£10.78	£9.85	£10.19	£10.55	£10.62	£10.92	£11.62	£12.37	£13.17	£14.02
Imbalance (Elexon)	£0.76	£0.61	£0.61	£0.61	£0.61	£0.61	£0.61	£0.61	£0.61	£0.61	£0.61
AAHEDC	£0.44	£0.41	£0.42	£0.42	£0.43	£0.44	£0.45	£0.46	£0.47	£0.47	£0.48
DUoS	£26.54	£26.30	£25.68	£25.79	£26.30	£26.83	£27.36	£27.91	£28.47	£29.04	£29.62
Renewables Obligation	£33.06	£31.03	£25.05	£24.91	£24.76	£24.26	£23.78	£23.30	£22.84	£22.38	£22.16
Feed-in Tariffs	£7.53	£7.60	£7.25	£7.32	£7.40	£7.47	£7.55	£7.62	£7.70	£7.77	£7.85
Climate Change Levy	£7.75	£8.01	£8.05	£8.09	£8.13	£8.17	£8.21	£8.25	£8.29	£8.34	£8.38
EMR (FIT CfD)	£8.85	£9.60	£11.87	£11.45	£14.24	£15.29	£15.94	£16.03	£16.12	£16.21	£16.30
Capacity Mechanism (CM)	£5.46	£10.78	£10.90	£12.12	£12.72	£13.17	£13.63	£14.11	£14.60	£15.11	£15.64
Nuclear RAB	£2.41	£4.17	£4.27	£4.28	£4.39	£4.54	£4.69	£4.85	£5.02	£5.19	£5.36
Ell Support Levy	£1.04	£1.44	£1.76	£1.71	£1.70	£1.72	£1.78	£1.84	£1.91	£1.97	£2.04
Supplier Margin	£0.31	£0.31	£0.31	£0.31	£0.31	£0.31	£0.31	£0.31	£0.31	£0.31	£0.31
Total Third Party (B)	***£121.88***	***£134.56***	***£131.88***	***£135.51***	***£142.46***	***£145.28***	***£148.55***	***£151.92***	***£155.47***	***£159.26***	***£163.35***

Cost component (£/MWh) - HIGH	Year 2025-2026 Nominal	Year 2026-2027 Nominal	Year 2027-2028 Nominal	Year 2028-2029 Nominal	Year 2029-2030 Nominal	Year 2030-2031 Nominal	Year 2031-2032 Nominal	Year 2032-2033 Nominal	Year 2033-2034 Nominal	Year 2034-2035 Nominal	Year 2035-2036 Nominal
Transmission losses	-£1.27	-£1.61	-£1.75	-£1.70	-£1.69	-£1.67	-£1.70	-£1.79	-£1.89	-£1.99	-£2.10
Distribution losses	£6.89	£8.74	£9.53	£9.26	£9.21	£9.09	£9.25	£9.74	£10.26	£10.82	£11.40
TNUoS	£10.43	£24.29	£28.82	£33.93	£37.51	£41.25	£45.19	£47.45	£49.83	£52.32	£54.93
BSUoS	£15.31	£18.19	£18.99	£19.66	£20.35	£20.49	£21.05	£22.41	£23.85	£25.39	£27.04
Imbalance (Elexon)	£0.76	£1.15	£1.17	£1.20	£1.22	£1.24	£1.27	£1.30	£1.32	£1.35	£1.37
HDCA (Hydro)	£0.44	£0.50	£0.52	£0.53	£0.53	£0.55	£0.57	£0.58	£0.59	£0.61	£0.62
DUoS	£30.03	£29.76	£32.82	£32.95	£33.61	£34.28	£34.97	£35.66	£36.38	£37.11	£37.85
Renewables Obligation	£33.06	£36.89	£30.62	£30.45	£30.26	£29.66	£29.06	£28.48	£27.91	£27.35	£27.08
Feed-in Tariffs	£9.20	£9.29	£9.38	£9.48	£9.57	£9.67	£9.76	£9.86	£9.96	£10.06	£10.16
Climate Change Levy	£7.75	£8.01	£8.29	£8.58	£8.88	£9.19	£9.51	£9.85	£10.19	£10.55	£10.92
EMR (FIT CfD)	£17.71	£21.59	£26.70	£27.49	£34.19	£36.71	£38.25	£40.61	£40.84	£41.07	£41.30
Capacity Mechanism (CM)	£8.19	£18.19	£18.40	£20.45	£21.47	£22.22	£23.00	£23.81	£24.64	£25.50	£26.39
Nuclear RAB	£3.69	£8.51	£8.72	£8.93	£9.14	£9.45	£9.77	£10.10	£10.45	£10.80	£11.17
Ell Support Levy	£1.32	£1.90	£2.45	£2.52	£2.59	£2.68	£2.78	£2.88	£2.98	£3.08	£3.19
Supplier Margin	£0.31	£0.31	£0.31	£0.31	£0.31	£0.31	£0.31	£0.31	£0.31	£0.31	£0.31
Total Third Party (B)	***£143.82***	***£185.72***	***£194.98***	***£204.62***	***£217.15***	***£225.12***	***£233.04***	***£241.25***	***£247.63***	***£254.33***	***£261.63***

Annex 6
West Central Bioresources

Contents

1 Introduction 3
2 Maintaining the Core of Scottish Water's Established Governance Model 4
3 Roles Identified by WICS 5
4 Our Interpretation of the IDM Role 6
5 Proposed Governance for WCB and Additional Clarity Following WICS' Feedback 8
6 Key Changes from the SR27 Business Plan Submission: 9
7 Integration with Existing Policies and Plans at National, Regional and Local Level 11
8 Planning Policy 14
9 National Planning Framework 4 (NPF4) 15
10 Regional Strategy 17
11 Local Development Plan 21
12 Wider National Policy Connections 25

1 Introduction

1.1 WICS have requested additional information in relation to West Central Bioresources. This includes:

- Providing a view of governance arrangements for West Central Bioresources.
- Providing a more in-depth assessment of how the West Central Bioresources project integrates with existing policies and plans at national, regional and local level.

2 Maintaining the Core of Scottish Water's Established Governance Model

2.1 The SR27 Final Business Plan set out the governance arrangements for West Central Bioresources within Scottish Water's established investment governance framework. This framework has served Scottish Water well over successive investment periods. It provides executive oversight, routes major investment decisions through formal committees and reserves the largest commitments for the Scottish Water Board.

3 Roles Identified by WICS

3.1 Scottish Water has noted the challenge set by WICS and is strengthening our current governance structure for the West Central Bioresources (WCB) project to incorporate the roles identified by WICS through the Scottish Public Finance Manual requirements. This will make clearer the assurance products, Board-visible evidence gates and route for external challenge before the next major decision point (Gate 80/90).

3.2 WICS' Draft Determination asks Scottish Water to make the WCB governance and assurance route more explicit with a central part of the ask being the identification of an Investment Decision Maker (IDM), alongside the Senior Responsible Owner (SRO), Programme Sponsor and Project Manager.

3.3 Scottish Water's interpretation is that these roles should strengthen accountability and assurance for WCB without cutting across the governance model through which material investment decisions are already made.

3.4 The IDM role has therefore been interpreted as a requirement for a clear investment decision authority and accountability route, rather than as a requirement to create a new individual role outside Scottish Water's established Board and committee structure.

4 Our Interpretation of the IDM Role

4.1 Scottish Water's considered position is that, for WCB, the Investment Decision Maker requirement is met by making explicit the Board's existing reserved authority for material investment decisions. The Scottish Water Board is the ultimate investment authority within Scottish Water for a programme of this scale.

4.2 In practice, the key investment decisions will flow to the Board. The IDM requirement should therefore not be interpreted as creating a separate individual decision-maker with authority to approve, redirect or override investment decisions that are reserved to the Board. Such an interpretation would risk creating a parallel authority route for WCB and could inadvertently cut across Scottish Water's established governance framework.

4.3 Accordingly, Scottish Water's position is that the IDM function is discharged through the Board's established approval route. Named executive and programme roles beneath the Board will provide clear ownership for delivery, assurance, evidence closure, escalation and reporting, but they will not displace the Board's ultimate investment authority.

4.4 This interpretation is also consistent with the wider assurance evidence that underpins the SR27 Final Business Plan. Scottish Water's Board Assurance Statement describes a model in which the Board provides leadership, scrutiny and challenge over the Final Business Plan, supported by first-line business ownership, second-line senior review and third-line external assurance.

4.5 It also records the Board's role in testing the scope and scale of investment, the affordability and value-for-money position, the deliverability of the plan and the strength of the supporting evidence. For WCB, the proposed IDM interpretation applies that same principle to the next phase of programme governance: the Board retains the formal investment decision for material commitments, while the SRO, Programme Sponsor and Project Manager provide the accountable route for delivery and assurance.

4.6 Available public guidance supports the principles behind this position and should not be read as prescribing a separate individual IDM model for Scottish Water. The relevant assurance practice emphasises named accountability, early risk assessment, proportionate independent assurance, clear escalation and an auditable evidence trail before major investment decisions. It does not require Scottish Water to replace, duplicate or dilute its established Board-reserved authority route for a programme of this scale.

4.7 This interpretation is consistent with Scottish public-sector assurance practice, where the IDM is identified at the point of formal investment authority within the relevant governance model.

4.8 The stronger argument for WCB is therefore one of governance intent rather than external precedent. The IDM requirement can be met by making the investment decision authority explicit, while ensuring that the SRO, Programme Sponsor and Project Manager provide the named route for delivery accountability, assurance closure, escalation and reporting. This preserves the role of the Board for material investment decisions and strengthens the evidence route beneath it.

4.9 Scottish Water has noted the requirement for the other named roles and will formally appoint the SRO, Programme Sponsor and Project Manager. These appointments will make clear how responsibility is delegated from the Board-approved investment route into programme delivery, assurance and reporting.

Table 1: Summarises Scottish Water's interpretation of the roles proposed by WICS and the way in which those roles will be reflected for WCB

WICS Role	Proposed Scottish Water interpretation for WCB
Investment Decision Maker (IDM)	Scottish Water Board**.** For WCB, the IDM requirement is met by identifying the Board as the ultimate investment authority for Board reserved decisions. WCB exceeds the Totex Investment Group approval thresholds, and material investment decisions will therefore flow to the Board through the established approval route. No separate named individual will have authority to approve, redirect or override decisions reserved to the Board.
Senior Responsible Owner	Named executive accountable for delivery of the WICS action plan, governance framework, assurance route, evidence closure and Board reporting. To be appointed via a formal letter of appointment.
Programme Sponsor / Project Manager	Formally appointed roles to manage cross-directorate sponsorship, programme controls, evidence closure and escalation. To be appointed via a formal letter of appointment.

5 Proposed Governance for WCB and Additional Clarity Following WICS' Feedback

5.1 Figure 1 below illustrates how the WICS proposed roles are overlaid within the current governance structure. Scottish Water is also clarifying further refinements it intends to introduce to provide the Board with greater oversight of the WCB programme and to maintain a clear channel for updating key stakeholders, including WICS, as the programme moves towards Gate 80/90. This includes placing WCB formally on the agenda of both the WIIG and the ICG.

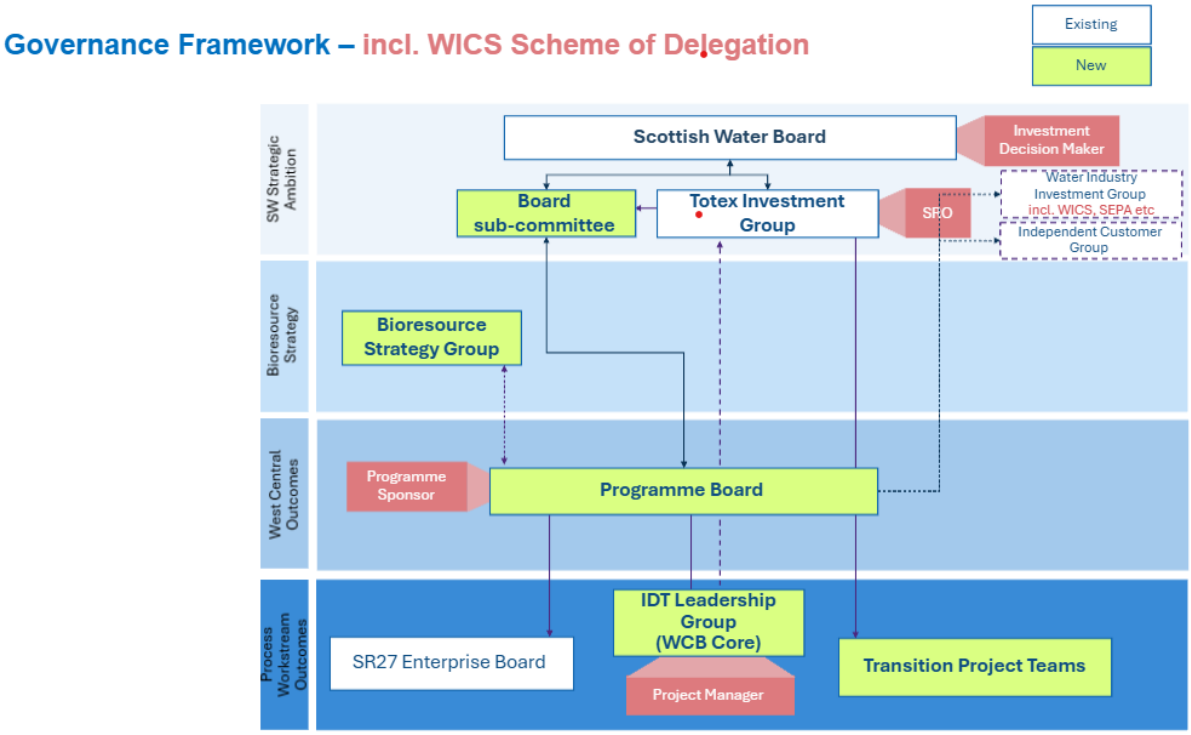


Figure 1 : Proposed changes to the current Governance structure specifically for the WCB Programme and in response to the WICS feedback ***(green = proposed changes)***

6 Key Changes from the SR27 Business Plan Submission:

6.1 Embedded the Scottish Public Finance Manual role requirements requested by WICS within the Governance Framework.

6.2 Establishing an informal sub-committee of the Board, focused on WCB. The objective of this sub-committee will be to provide regular scrutiny of the programme, test progress against the WICS response and Gate 80/90 critical path, and report formally into the Board. This will give WICS confidence that WCB is receiving dedicated Board-level attention without disrupting established authorities.

6.3 The introduction of a Programme Board, replacing the current Steering Group, to recognise that WCB delivery depends on a wider set of linked projects and workstreams that are critical to achieving the WCB outcomes, including satellite projects being delivered through SR27 Enterprise and transition project/s for developing Advanced Anaerobic Digestion (AAD) and Control of Major Accident Hazards (COMAH) Operational Capability, securing land for Biosolids and decommissioning of existing facilities / plant (if required).

6.4 Scottish Water will engage external stakeholders by updating both the Water Industry Investment Group (WIIG) and the Independent Customer Group (ICG) through the existing cadence, with a standing WCB agenda item to report progress as the programme moves towards Gate 80/90.

6.5 We have extended the totality of the Governance Framework to include the relationship with the Delivery Model.

6.6 Scottish Water will stand up an Independent Red Team that will include external experts to scrutinise the Gate 80/90 plan before Board approval. This should be positioned as a fresh-eyes challenge of the investment case, delivery model, cost confidence, policy and consent readiness, operational integration, value-for-money controls and customer impact. The output will be a short Red Team report, action tracker and closure note to the Board before the Board is asked to approve the Gate 80/90 position.

6.7 Scottish Water has considered WICS' Draft Determination feedback on the governance and assurance arrangements for West Central Bioresources and agrees that the route to the next major investment decision should be made more explicit. The technical appendix retains the core of Scottish Water's established investment governance model, while strengthening the visibility of

WCB-specific roles, assurance products, evidence gates and Board-level scrutiny before Gate 80/90.

6.8 The proposed approach makes the Board's investment decision role explicit, while embedding the WICS-identified roles within the relevant governance forums so that the Senior Responsible Owner, Programme Sponsor and Project Manager provide named accountability for delivery, assurance closure, evidence management, escalation and reporting through the established governance framework.

6.9 Taken together, these changes are intended to give WICS clearer evidence that WCB is subject to proportionate, independent and Board-visible assurance before material commitments are made, while preserving Scottish Water's established Board-reserved authority route for major investment decisions.

7 Integration with Existing Policies and Plans at National, Regional and Local Level

7.1 Scotland's Infrastructure Investment Plan

7.1.1 Scotland's Infrastructure Investment Plan for Scotland 2021-22 to 2025-26 outlines three core strategic themes for guiding investment decisions in Scotland:

Table 2: Scotland's Infrastructure Investment Plan for Scotland 2021-22 to 2025-26

Strategic Theme	West Central Bioresources
Enabling the transition to net zero emissions and environmental sustainability	The West Central Bioresource (WCB) investment enables Scotland's transition to net zero emissions by replacing Scotland's largest gas-fired sludge dryer with Advanced Anaerobic Digestion (AAD) which will reduce fossil-fuel emissions and generate biogas producing renewable electricity, biomethane and heat. Bioresource quality will be improved and by recovering nutrients for example, WCB supports circular economy goals and improves environmental sustainability.
Driving inclusive economic growth	The WCB investment will support construction, engineering, operations and maintenance jobs over multiple decades due to the critical system-wide nature of the asset. These factors are supportive of the principles of driving inclusive economic growth.
Building resilient and sustainable places.	Optimising use of existing infrastructure, extending onto a previously developed site and adopting low-carbon technologies represents a sustainable infrastructure solution which accords with the principles of the National Planning Framework 4 (NPF4). A constraints-led approach to the WCB design has been adopted whereby the development footprint was reduced to minimise loss of mature woodland and avoid incursion into local nature conservation sites. Due to the scale of the facility, there will be visual change, but the design seeks to mitigate potential landscape impact. Emission to air, water and land will be tightly controlled through the SEPA permitting process. Overall, the design seeks to minimise potential environmental impacts and maximise integration with the local area to help deliver resilient and sustainable places.

7.1.2 The Infrastructure Investment Plan (IIP) sets out the hierarchy of development in respect to the approach to be taken for infrastructure investment:

- Determine Future Need: Assess service design, digital solutions, and technology to see if physical infrastructure is absolutely necessary
- Maintain Existing Assets: Prioritize maintenance to ensure safety, sustainability, and efficiency
- Enhance/Repurpose Existing Assets: Upgrade or repurpose current infrastructure before building new
- Create New Assets: Build new infrastructure only when the first three steps cannot meet the identified need.

7.1.3 The West Central Bioresource (WCB) investment was assessed against the hierarchy, and aligns with the principles to be considered. The future need has been determined and WCB investment is required to create new physical assets to modernise Scotland's bioresource system and to ensure compliance, resilience and environmental performance. The investment will safeguard against the potential failure of current sludge dryer assets, which are operating at reduced capacity, whilst ensuring opportunities for growth. Delaying infrastructure investment would result in significantly higher costs and would heighten operational and compliance risks.

7.1.4 Service designs have been assessed (Section 3 in TA010 West Central Bioresource) and the number of sites with associated additional physical infrastructure has been minimised through the development of a hub and spoke strategy. This strategy consolidates Glasgow, Ayrshire and parts of Tayside and Fife bioresources to be treated at one central facility at Daldowie, as opposed to multiple sites requiring additional physical infrastructure. Therefore, physical infrastructure is being developed only where absolutely necessary.

7.1.5 The number of new assets in the WCB investment has been minimised, as the investment will maintain existing assets as the priority and they will be integrated into the new scheme. This includes the Greater Glasgow Sludge Main and the existing wastewater treatment works (WWTW) at Daldowie. In addition the following assets from the existing bioresource treatment centre (BTC) will be retained and will be maintained to ensure safety, sustainability and efficiency:

- Imported liquid sludge tanker bays
- Sludge reception tanks
- Emergency sludge storage tanks
- Strainpress
- Sludge buffer tanks
- Liquor treatment plant pumping station

- Lamella and blower building
- Liquor treatment plant
- Drainage pumping station
- Cooling water pumping station

7.1.6 Further assets will be enhanced/repurposed. This includes repurposing the existing dryer building which could also be used to site future resource recovery technologies.

7.1.7 The Scottish Government's draft Infrastructure Strategy 2027-2037 sets a 10-year framework to guide investment towards net-zero, inclusive growth, and resilient places. The Strategy builds on, and strengthens, the investment hierarchy, reinforcing the presumption in favour of maintaining and repurposing existing assets. As set out above, the WCB investment is in accordance with these principles.

7.1.8 The WCB investment is also in alignment with the overriding vision of the draft Infrastructure Strategy that infrastructure will support resilience, net zero and inclusive growth. Further, the Strategy commits to aligning infrastructure decisions with local priorities and spatial planning with place principles and National Planning Framework 4 (NPF4) as outlined in the following sections.

8 Planning Policy

8.1 A planning application is required for the proposed WCB development under the provisions of The Town and Country Planning (Scotland) Act 1997. The proposed development is not identified as a national development but is classed as a 'major' development under The Town and Country Planning (Hierarchy of Developments) (Scotland) Regulations 2009.

8.2 The WCB development is currently within the pre-application consultation period in which two community engagement meetings have been held, the first in June and the second in August 2026. This process promotes transparency, accountability, and community involvement, allowing developers to gather feedback, identify issues, and refine their proposals accordingly. The aim is to submit the planning application late Autumn 2026.

8.3 The development has been assessed by Glasgow City Council as being an Environmental Impact Assessment Development under Schedule 2 of the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017. An Environmental Impact Assessment is underway and an Environmental Report will be submitted with the planning application.

8.4 The proposed development will need to be authorised by SEPA under the Environmental Authorisations (Scotland) Regulations 2018 (EASR). The permit will place conditions on Scottish Water to ensure that the bioresource treatment centre is operated in a way that will protect the environment and human health. The application will be submitted on a similar timeframe to the planning application.

8.5 It is a legislative requirement that planning decisions must be made in accordance with the development plan, unless material considerations indicate otherwise. The statutory development plan for any given area of Scotland consists of the National Planning Framework and the relevant Local Development Plan(s). The Daldowie Bioresource Treatment Centre, and the existing works, fall within the Glasgow City Council (GCC) area to which the Glasgow City Development Plan 2017 applies.

9 National Planning Framework 4 (NPF4)

9.1 **NPF4** sets out the Scottish Government's long term spatial strategy and national planning policies. There is a strong emphasis on the global climate and nature crises and the reduction of greenhouse gas emissions.

9.2 Part 1 of NPF4 sets out the **National Spatial Strategy for Scotland 2045** which adopts six spatial principles, just transition, conserving and recycling assets, local living, compact urban growth, rebalanced development and rural revitalisation. The aim at Daldowie is to transition from the existing high carbon treatment technology to a modern low carbon solution, making a significant contribution to net zero ambitions. The proposal makes use of existing infrastructure to reduce the development footprint and minimise waste. The layout focuses on already developed areas of the expansion site which allows protection of areas of higher biodiversity value within the site. Emissions to land, water and air will be tightly controlled to minimise any adverse impact on residential amenity. The location of the proposed facility also enables the transfer of existing employment to the adjacent facility.

9.3 The planning strategy for the Central area will be taken forward through a **Regional Spatial Strategy** based on Regional Spatial Priorities. Regional spatial priorities for the Central area recognise that "*We will only meet our climate change commitments if we make significant changes to the densely populated central belt of Scotland. Our urban communities will play a critical role in reducing the emissions generated by the way we live our lives*." Regional Spatial Strategies and Local Development Plans will be guided by the strategy for the Central area which aims to provide net zero energy solutions and improved energy efficiency, pioneer low carbon living and urban greening and target economic investment to overcome disadvantage and support a greener wellbeing economy.

9.4 **Annex C to NPF4** sets out guidance for the preparation of Regional Spatial Strategies. The development of the Regional Spatial Strategy for the Glasgow City region is underway with eight planning authorities working together to guide future long-term strategic development. The existing bioresource treatment centre treats wastewater sludges from the wider Glasgow City region and the replacement works will increase the regional spread across central Scotland.

9.5 Annex C states that "*To deliver sustainable places, Regional Spatial Strategies and Local Development Plans in this area should support net zero energy solutions including extended heat networks and improved energy efficiency, together with urban greening and improved low carbon transport*." The existing

works utilises Scotland's largest gas-fired sludge dryer generating high carbon emissions. The replacement facility will adopt low carbon technologies, providing significant carbon emission savings, estimated to be around 35,000 tCO2e per year. This will make a major contribution to the spatial strategy for the central area. As well as the significant reduction in carbon emissions resulting from the change of technology, the proposal is seeking to tie in with regional priorities for urban greening through the development of the biodiversity enhancement strategy.

10 Regional Strategy

10.1 **A Regional Economic Strategy 2021** is available for the Glasgow City Region. Although not part of planning policy, it is still relevant to the proposed works. One of the Action Area Priorities within this strategy is to "*Reduce Infrastructure Emissions*" and a Transformational Opportunity is identified as "*Accelerating Climate Action*" which advises that all places must urgently eliminate carbon emissions. It also recognises that "*Decarbonising our existing infrastructure, and building its resilience to a changing climate, increases its efficiency and reliability*." The significant reduction in carbon emissions resulting from the modification of the sludge treatment processes will provide a major contribution to these regional priorities.

10.2 **Part 2 to NPF4** sets out **National Planning Policy** which forms part of the statutory development plan. The policies focus on sustainable, liveable and productive places.

10.3 **Policy 1 (Tackling the climate and nature crisis)** is an overarching policy to which all other policies are connected. It requires "*When considering all development proposals significant weight will be given to the global climate and nature crises*".

10.4 **Policy 2 (Climate mitigation and adaption)** states "*a) Development proposals will be sited and designed to minimise lifecycle greenhouse gas emissions as far as possible."* The adoption of low carbon technologies for the replacement facility provides significant carbon savings aligning with the climate mitigation principles of policies 1 and 2. Policy 2 also states "*c) Development proposals to retrofit measures to existing developments that reduce emissions or support adaptation to climate change will be supported.*" In this case there is an existing bioresource treatment centre (BTC) with a high carbon footprint that is being updated with a new low carbon treatment centre which directly aligns with the objective to reduce operational carbon emissions. A number of the existing treatment units will be maintained or repurposed and the carbon emissions associated with construction of the new assets will be closely controlled, through mandated carbon limits. Low carbon site construction practices will also be deployed.

10.5 **Policy 3 (Biodiversity)** seeks to protect biodiversity and deliver positive effects from development. Major development will only be supported where it can be demonstrated that the proposal "*will conserve, restore and enhance biodiversity, including nature networks so they are in a demonstrably better state than without intervention".* An avoidance strategy was adopted for the

WCB design to minimise impacts on habitats with high biodiversity value. Habitat loss was quantified and an enhancement strategy is currently being developed in liaison with GCC which will include new tree planting and enhancement of existing natural assets within the site. This approach is consistent with policy 3.

10.6 **Policy 4 (Natural places)** states that *"a) Development proposals which by virtue of type, location or scale will have an unacceptable impact on the natural environment, will not be supported."* A constraints-led approach to design was adopted whereby the development footprint was reduced to minimise loss of mature woodland and avoid incursion into local nature conservation sites. A suite of protected species surveys was carried out and Environmental Impact Assessment is underway with a focus on mitigating impact on woodland and biodiversity.

10.7 **Policy 6 (Forestry, woodland and trees)** seeks to protect and expand forests, woodland and trees. It states that "*c) Development proposals involving woodland removal will only be supported where they will achieve significant and clearly defined additional public benefits".* An arboricultural survey has been carried out to identify the extent and quality of the woodland around the site. Following this survey the footprint of the development was reduced to minimise loss of high value woodland. Appropriate compensatory planting will be provided in accordance with Policy 6.

10.8 **Policy 7 (Historic assets and places)** seeks to protect and enhance historic environment. There are no heritage assets on the site but some of the nearby crematorium buildings are listed. Potential impact on the settings of these buildings is mitigated through landform and the retention of a wide woodland belt to the east of the proposed facility. A desk-based archaeological assessment is underway to assess potential for buried remains.

10.9 The existing WWTW, BTC and training centre lie within the green belt. **Policy 8 (Green belts)** supports "*essential infrastructure*" and "*intensification of established use*s" within the green belt. The WCB investment constitutes essential infrastructure and the proposed site offers significant locational benefits, allowing maximum use of existing assets and infrastructure, including the strategic sludge main, existing WwTW and a number of the assets from the existing BTC including the liquor treatment plant.

10.10 **Policy 9 (Brownfield, vacant and derelict land and empty buildings)**, encourages the reuse of brownfield land to minimise greenfield land take. The training centre site is largely developed and by restricting the footprint of the proposed treatment facility incursion into greenfield land is minimised.

10.11 **Policy 11 (Energy)** encourages provision of renewable energy technology "*a) Development proposals for all forms of renewable, low-carbon and zero emissions technologies will be supported*." The WCB investment has been designed to capture the biogas from the advanced anaerobic digestion for re-use as a renewable energy source. A hybrid approach is then proposed to use Combined Heat and Power (CHP) plants to generate energy to power the site and to convert the gases for export to the national grid. This approach accords with these policy principles. The electricity produced from the CHP is being designed with the intention to supply the whole site's electricity demand including the adjacent WWTW.

10.12 **Policy 12 (Zero waste)** states that "*f) Proposals for the capture, distribution or use of gases captured from landfill sites or waste water treatment plant will be supported*." The proposal to capture the biogas from the digesters for re-use is supported by this policy which also provides that " *b) Development proposals will be supported where they: i. reuse existing buildings and infrastructure*;" A key locational advantage of the proposed site is that the existing strategic sludge main and the WWTW alongside some of the existing structures within the BTC can be re-used (see page 1 for list) aligning with Scotland's Infrastructure Investment Plan (IIP) hierarchy of development.

10.13 **Policy 14 (Design quality and place)** requires that " *a) Development proposals will be designed to improve the quality of an area whether in urban or rural locations and regardless of scale.*" It also sets out the six qualities of successful places, healthy, pleasant, connected, distinctive, sustainable and adaptable, and further guidance is given in Annex D. The constraints-led approach to developing the footprint of the new facility means that the majority of the woodland around the site is being retained protecting the landscape setting. Due to the scale of the facility there will be visual change but the design seeks to mitigate potential landscape impact. There is potential for nuisance to residents close to the facility and it is recognised that this includes the Newton area of South Lanarkshire on the opposite side of the River Clyde. Emission to air, water and land will be tightly controlled through the SEPA permitting process and the low-carbon solution being adopted is sustainable. Overall, the design seeks to minimise potential environmental impacts and maximise integration with the local area.

10.14 **Policy 18 (Infrastructure first)** advocates putting "*infrastructure considerations at the heart of placemaking*". Optimising use of existing infrastructure, extending onto a previously developed site and adopting low-carbon technologies represents a sustainable infrastructure solution which accords with the principles of NPF4.

10.15 **Policy 22 (Flood risk)** is also applicable as the SEPA future flood maps show parts of the site as being at risk of flooding. It states that "*a) Development proposals at risk of flooding or in a flood risk area will only be supported if they are for: i. essential infrastructure where the location is required for operational reasons*". A Flood Risk Assessment has been carried out for the site which used data from the Non-Tidal River Clyde Hydraulic Model and the predicted fluvial flooding does not extend into the development area. There is some localised surface water flooding which is dealt with through the drainage plan for the site. The report found that "*The assessment concludes that the proposed development can be delivered safely in accordance with national and local policy*."

10.16 **Policy 23 (Health and safety)** seeks to protect people from environmental harm. This includes air quality and noise. The proposed development will need to be authorised by SEPA under the Environmental Authorisations (Scotland) Regulations 2018. The permit will place conditions on Scottish Water to ensure that the WCB investment is operated in a way that will protect the environment and human health. As part of the application an Air Emissions Risk Assessment, Odour Risk Assessment & Management Plan, Noise & Vibration Assessment and Management Plan and Accident Prevention and Mitigation Plan are being prepared.

11 Local Development Plan

11.1 **The Local Development Plan** for this area is the **Glasgow City Development Plan (CDP) 2017**. This pre-dates NPF4 and where there is incompatibility NPF4 takes priority. A full assessment will be carried out against these policies in advance of, and to be included with, the planning application submission which will be made to GCC as planning authority.

11.2 **CDP1 (The Placemaking Principle)** - Policy CDP1 sets out the six qualities of place which development should aspire to achieve to be successful. One of these six qualities is *"It is resource efficient."* The policy also aims to ensure development aspires to the highest standards of design and contribute towards making Glasgow City a better and healthier environment to live in and provides the criteria which development should meet to attain this objective. This includes: *"Delivering highly creative, innovative, and technical standards in design of buildings, structures, infrastructures and their setting"* The aim of this project is to transition from the existing high carbon sludge treatment technology to a modern low carbon solution, which will contribute to net zero ambitions. Energy recovery will be maximised. The facility will utilise more innovative modern technology to treat bioresource from households across Scotland's Central Belt. Delivering innovative standards is particularly evident in the proposed approach to nutrient recovery and process emission reduction where an ammonia recovery plant to produce a liquid fertiliser product is under appraisal.

11.3 Another of the criteria is *"Taking the opportunity to deliver an integrated approach to infrastructure delivery."* The proposed new facility will extend the current bioresource treatment centre, making use of, extending and improving the existing infrastructure. In addition, in line with Zero Waste Scotland's proposed Circular Construction Hub approach, opportunities to exchange a range of construction materials with wider infrastructure industries will be examined during the WCB build.

11.4 **CDP2 (Sustainable Spatial Strategy) -** Policy CDP2 is supportive of new development proposals which meet a variety of criteria, including: *"Utilise brownfield sites in preference to greenfield sites"* As above while the proposed site is located within the green belt, the new facility will partly be making use of the existing bioresource treatment infrastructure and the footprint of the extension will focus on developed ground within the training centre site.

11.5 Another of the criteria in respect to development proposals is that they *"Protect and enhance the function and integrity of the Green Belt and contribute towards*

the development of an integrated green infrastructure" The existing WWTW, BTC and the training centre are already within the green belt. The proposed bioresource facility would maximise use of existing assets and infrastructure, including the strategic sludge main. Retention of high value woodland around the site has been a key design priority and this helps to screen the proposed development from the surrounding area.

11.6 **CDP5 (Resource Management) -** This policy seeks to promote energy efficient design and the use of low and zero carbon generating technologies in new development. Policy CDP5 states that *"The Council will support proposals that contribute to reducing greenhouse gas emissions and overall energy use and which facilitate the delivery of renewable energy and heat. This includes support for a wide range of technologies that generate energy and/or heat from renewable sources, and distribute it efficiently."* The replacement of the existing BTC with the WCB investment will maximise the resource efficiency of bioresource processing, significantly reduce carbon emissions and minimise waste products generated. The choice of WCB technology aims to minimise reliance on the national electricity grid and generate sufficient renewable electricity to sustain its own operation and that of the adjacent WWTW. Any excess renewable energy is proposed to be exported to the natural gas grid following the upgrading of the produced biogas to biomethane. Additional ammonia resource recovery to produce a liquid fertiliser product is being evaluated.

11.7 **CDP6 (Green Belt and Green Network) –** This policy notes the key role of the Green Belt within the Green Network, including in achieving environmental objectives, such as protecting the landscape character of the City as well as its identity and character, and in supporting regeneration. The policy states: *"The Council will not support development that would adversely affect the function and integrity of the Green Belt. Some forms of development (as set out in Supplementary Guidance) may be acceptable in the Green Belt provided other considerations can be satisfactorily addressed."* While there is a presumption against development which adversely affects the function or integrity of the green belt, there are some exceptions to this general presumption in Supplementary Guidance (provided this meets specific requirements), and these include where proposals are for *"essential infrastructure",* and *"intensification of established uses".*

11.8 **CDP7 (Natural Environment)** aims to safeguard ecosystems and protected species and help to enhance biodiversity and requires that development should not have an unacceptable impact (directly, indirectly or cumulatively) on areas designated for landscape importance; on sites, habitats, species, or ecosystems which are protected by law or designated as important for their

nature conservation or geodiversity value; or on trees, hedgerows or woodlands of importance. The policy states that *"Where development, which may have an impact on such assets, is permitted, it should be designed to minimise adverse impacts and, where these cannot be avoided, suitable mitigation should be provided. The Council may require the developer to undertake surveys, prior to planning applications being determined."* A Preliminary Ecological Appraisal including a series of ecological surveys and an Outline Arboricultural Assessment have been undertaken for the development site which influenced the design footprint. Environmental Impact Assessment (EIA) is currently underway with a focus on woodland impacts and mitigation. The biodiversity baseline has been assessed and an enhancement strategy is being prepared.

11.9 In relation to the presence of ancient and native woodland at the north and south of the Daldowie site, Policy CDP7 also states that *"Woodland removal is likely to be acceptable only where it would achieve significant and clearly defined additional public benefits. Compensatory planting may be required."* Some removal of trees is required to accommodate the development but tree protection measures will be put in place around the development site. Tree planting and enhancement of existing woodland assets is proposed as part of biodiversity enhancements, and an enhancement strategy is currently being developed. The new WCB investment is adjacent to the existing WWTW and BTC to maximise use of existing infrastructure. It is designed to serve the existing catchment as well as processing material from a wider area, using updated low-carbon technology and so there would be a public benefit to the works.

11.10 **CDP8 (Water Environment)** states that *"For areas potentially at flood risk, the Council will require developers to consider the flood risk to their proposed development through a Flood Risk Assessment (FRA); and the impact of discharging surface water from the proposed development to any water body or wetland, through a Drainage Impact Assessment (DIA)."* A Flood Risk Assessment has been undertaken for this site and a drainage strategy is being developed. Discharges to the River Clyde are anticipated to be within existing discharge licence parameters.

11.11 **CDP9 (Historic Environment)** aims to protect, preserve as well as conserve and enhance the historic environment and highlights that development would not be supported where it would adversely affect the historic environment. The proposed development site is not within a Conservation Area and there are no Scheduled Monuments or Gardens and Designed Landscapes in the vicinity. There are category B listed buildings at Daldowie Crematorium and Greyfriars beyond, however any impact on these structures would be mitigated by

retaining the existing woodland at the east of the proposed bioresource treatment centre.

11.12 **CDP11 (Sustainable Transport)** seeks ensure transport infrastructure works effectively and aims to deliver more sustainable transport patterns. The existing BTC is accessed via a grade separated junction from the M74 and this access will continue to be used for the extended facility. Existing public transport networks in the area will continue to be used. Scottish Water have also installed a hydro treated vegetable oil (HVO) facility at Daldowie which delivers up to a 90% reduction in carbon emissions compared to diesel use. This is being used to support our tanker fleet which currently is unable to transition to electric. HVO can continue to support WCB tanker movements until such time the transition to electrification is achieved.

11.13 **CDP12 (Delivering Development).** The aim of policy CDP12 is to contribute to a sustainable and economically successful city by providing facilities and infrastructure necessary to mitigate the impact of change on Glasgow's resources. Wastewater treatment is essential infrastructure to facilitate development. EIA is ongoing with a view to mitigating potential environmental impacts and maximise the sustainability of the proposed replacement facility and a drainage assessment is being carried out.

11.14 This assessment of the proposal against the Development Plan has been made in advance of a full assessment which will be carried and submitted with the planning application. It is also recognised that there are potential cross boundary effects resulting from the replacement facility and the project has been developed taking cognisance of this.

11.15 The existing BTC utilises ageing sludge dryer technology which is no longer the best practicable environmental option. The proposed replacement uses modern low-carbon technologies that better fit with National, Regional and local priorities.

12 Wider National Policy Connections

12.1 The UK Climate Change Committee (CCC) advice to the Scottish Government's - 7th Carbon budget explicitly advises:

- Investment in the wastewater sector is needed to roll out technologies such as advanced anaerobic digestion to both municipal and industrial wastewater treatment plants; and,

- Wastewater treatment improvements (5% of emissions reduction in 2040). Nitrous oxide emissions from industrial and municipal wastewater treatment are addressed through covering and containment, technologies such as membrane aerated biofilm reactors, and enhanced emissions monitoring. Methane emissions are addressed through the deployment of advanced anaerobic digestion and upgrading biogas to biomethane for use as a natural gas substitute.

- Advanced anaerobic digestion is already in widespread use, deployed across half of wastewater treatment sites. In our pathway, it is rolled out to all plants by 2030. Membrane aerated biofilm reactors are rolled out from 2030 to 10% of sites by 2045.
- Enhanced monitoring and real-time control reduce emissions by allowing identification and treatment of issues within treatment plants. Digital twins (virtual models of treatment plants based on real-time data) reduce process emissions through optimisation. These measures, along with biomethane gas to grid and covering containment, are rolled out from 2025 to 70% of sites.

12.2 WCB is employing the recommended advanced anaerobic digestion technology and examining further nitrous oxide process emission reduction through the deployment of ammonia recovery from the liquors from the digestion plant and enhanced monitoring and real-time control at the adjacent WwTW. Therefore, WCB directly supports the advice of the CCC in minimising overall emissions from wastewater, as well as leading to product recovery.

Annex 7
Board Assurance

1 Purpose

1.1 This annex provides additional information relating to Board Assurance. In section 5.2.17 WICS require Scottish Water's Board to provide explicit assurance that its proposed investment programme is deliverable, taking account of internal capability and supply chain constraints. This assurance is a critical safeguard for customers, ensuring that the Board rigorously tests the plan's deliverability before submission. Annex 7 contains the following information relating to the Additional Board Assurance Statement.

Annex 7	**Provided by**
SR27 DD Additional Board Assurance Statement	Scottish Water Board
Supporting Evidence	**Provided by**
SR27 Readiness Report	Turner and Townsend
SR27 Capacity Risk Board Summary	Capital Investment Directorate
SR27 Internal Capacity Paper August 2026	People Directorate

BUSINESS PLAN 2027-2033
ADDITIONAL BOARD ASSURANCE STATEMENT

Introduction

The Scottish Water Board (the Board) has been fully engaged throughout the development of the Business Plan 2027-2033 and the preparation of the response to the Draft Determination, ensuring that it is appropriate for the SR27 period and suitably aligned with the Long-Term Strategy. The Board has provided leadership, scrutiny and challenge at every stage of the business plan process.

Within the Draft Determination, WICS has requested an additional assurance statement from Scottish Water's Board that it has both the internal capacity and supply chain capacity to deliver the level of investment proposed in the Draft Determination.

Assurance Activities

To enable the Board to provide this additional assurance statement a second independent report by Turner and Townsend regarding our delivery capacity has been commissioned. In addition, the Scottish Water People Directorate has prepared a report on Scottish Water's internal capacity.

The Board makes the following statements to confirm it has challenged and assured itself that Scottish Water has the internal capacity and supply chain capacity to deliver the level of investment proposed in the Draft Determination. The statement below provides a summary of the evidence that supports this statement:

Scottish Water has both the internal capacity and supply chain capacity to deliver the programme
Evidence Turner & Townsend concluded that Scottish Water is well positioned to enter SR27 delivery. The organisation has established a mature portfolio planning framework, a credible and scalable delivery model, strong internal capability, a validated supply chain strategy, effective governance arrangements, mature forecasting capabilities, and robust commercial controls. Internal capability, delivery partner capacity, and market readiness have all been assessed positively by Turner & Townsend, providing confidence that Scottish Water has established a credible platform from which to deliver the ambitious investment requirements of SR27. Turner & Townsend's assessment identified no fundamental organisational, commercial, governance, or capacity-related barriers to successful delivery. Importantly, all the principal concerns raised by WICS have been examined directly through the Turner & Townsend review and were found to be either substantially addressed or subject to credible mitigation and improvement plans. The assessment of internal capacity from the Scottish Water People Directorate supported the findings of the Turner & Townsend assessment concluding that Scottish Water has confidence that it has the core internal capacity and organisational readiness required to deliver SR27. This confidence is based on comparable current delivery, established internal resource, strengthened governance and assurance, the new operating model, the Enterprise delivery approach, and active workforce and skills. Scottish Water will continue to monitor

capacity against delivery requirements and emerging risks through established executive, performance and assurance arrangements.
How the Board has assured itself
The Board has reviewed the reports from both Turner and Townsend and the People Directorate. These reports have provided the Board with confidence that the risks related to the delivery of the programme are understood, and that mitigations to address these known risks are in place. The Board acknowledges that risks will always exist that are outside of Scottish Water's control, and that all reasonable mitigations against the impact of such risks materialising are in place. This provides the Board confidence that Scottish Water is in the best position to ensure that there is sufficient internal and supply chain capacity to deliver SR27.

SIGNED:

DEIRDRE MICHIE, OBE
CHAIR OF SCOTTISH WATER BOARD
(on behalf of the Board of Scottish Water)

Date: 1st September 2026

Executive Summary
SR27 Market Risks

Contents

1 Purpose 3
2 Market Risks 4
2.1 The Capacity of Our Supply Chain to Deliver Our Planned Investment Programme 4
2.2 Asset Management Plan (AMP) 8 significant increase in spend 4
2.3 Scotland's Forward Investment Programme 5
3 Summary 7
4 References 8

1 Purpose

1.1 This report provides Scottish Water's assessment of the key market risks that it will need to be cognisant of in the SR27 period.

1.2 The work undertaken for the Final Business Plan submission and capacity modelling, and the subsequent SR27 Readiness Report from Turner and Townsend set out how Scottish Water is structured to meet this rising investment program providing a clear pathway of mitigations of these risks, therefore these mitigation measures are not covered in this report.

1.3 Scottish Water recognises that active ongoing management of these risks will be required throughout SR27.

2 Market Risks

2.1 The Capacity of Our Supply Chain to Deliver Our Planned Investment Programme

2.1.1 Working with our DV2 Partners and the DV4 Bidders we undertook an analysis of our supply chain capacity during SR27. The partners and bidders provided delivery capacity and resource profiles which were consolidated with other supply chain data to provide an overall view of our capacity vs investment programme demand. Graph 1 below shows a summary of this setting out the base forecast capacity as well as a view of the potential growth in capacity. This analysis showed that we will have sufficient capacity to deliver the planned £8.1bn programme but that there are potential pinch points in years 5 and 6 where our demand gets very close to the forecast base capacity.

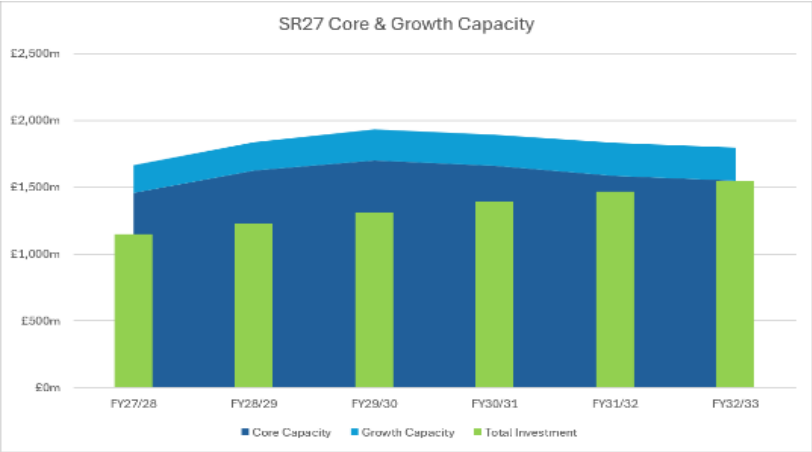


Figure 1: Supply Chain Capacity vs Investment Programme Demand

2.2 Asset Management Plan (AMP) 8 significant increase in spend

2.2.1 A key risk for Scottish Water is the significant increase in investment activity across England and Wales' water sector during AMP8 (2025-30), up to investment of £104bn(1) estimated to be c75% higher than AMP7.(2)

Table 1: External Market Pressure

External market pressure	Risks in relation to SW
AMP8	Competition for specialist people skills (Design; Construction; Commercial); Specialist process equipment; Infrastructure products

External market pressure	Risks in relation to SW
Wider England & Wales Infrastructure (Rail; Nuclear; Roads etc)	Competition for specialist people skills
Ireland & Northen Ireland	Competition for transferable project, commercial skills

2.2.2 Collectively, these pressures are likely to drive some specialist resource constraints, longer lead times, and increased price inflation above Consumer Price Index (CPI).

2.3 Scotland's Forward Investment Programme

2.3.1 Scotland is expected to experience continued investment across major infrastructure sectors including energy, transport, rail and wider public infrastructure programmes.

2.3.2 The projected spend in Scotland across these Programmes is £119bn between 2025-2035. [3, 4, 5, 6]

External market pressure	Risks in relation to SW
A9 and wider Scottish transport investment	Civil engineering, construction supervision and regional delivery capacity. Civil Materials, Hire Products including Welfare Units; JCB's etc. Expected constraints to emerge in Regional areas such as the North Central and at certain times.
SSEN, SP Energy Networks and grid reinforcement	Civil and Structural engineering; Trade skills in Electrical, MEICA, commissioning. Civil materials, Hire Products (welfare units; JCB's etc). Expected constraints to emerge in Regional areas such as the North East and at certain times.
Pumped hydro and wider energy transition investment	Competition for transferable project, commercial, environmental and programme leadership skills. Expected constraints to emerge in Regional areas such as the North and at certain times.
Wider Scottish infrastructure pipeline	General pressure on people, materials, consenting, planning

2.3.3 The most significant market capacity risk in Scotland is expected to come from energy. SSEN Transmission is investing approximately £29bn across the north

of Scotland by 2030, supporting up to 24,000 jobs across Scotland. The programme is expected to support up to 1 in 5 construction jobs in the north of Scotland and contribute to a 5% increase in construction sector employment.[7]

2.3.4 Scotland's construction industry is forecast to require approximately 2,590 additional workers annually between 2026-2030 to meet infrastructure and construction demand. Workforce availability will be further impacted by tighter immigration rules and the growth in infrastructure programmes in Ireland.[8]

2.3.5 The impact may be particularly acute at a regional level where multiple major projects are delivered concurrently. Localised capacity shortages could create significant pressures on pricing, availability and delivery performance, reducing supply chain resilience and increasing the likelihood of programme disruption. The Scottish Government have noted a 8.7% real terms reduction in capital funding and a 23% rise in construction materials costs since January 2020 will impact ability to meet commitments. The Scottish Chief Economist has noted that a higher-than-expected interest rates will result in modest growth in investment and this may be a mitigating factor.

3 Summary

3.1 Given the above wider market environment, the key residual risks are supply chain resilience and specialist delivery skill sets. These risks are visible and capable of active management, but they require sustained executive attention through work bank visibility, partner and supplier capacity planning, specialist discipline monitoring and strong capable-owner oversight.

4 References

1. Ofwat (2025) PR24 final determinations: Sector summary (revised). Birmingham: Ofwat. Available at: https://www.ofwat.gov.uk/wp-content/uploads/2025/04/PR24-FD-sector-summary-revised.pdf
2. KPMG and British Water (2025) A framework for change in AMP8. London: KPMG. Available at: https://assets.kpmg.com/content/dam/kpmgsites/uk/pdf/2025/04/framework-for-change.pdf
3. Scottish Government (2025) Offshore wind – potential project capital value: factsheet. Edinburgh: Scottish Government. Available at: https://www.gov.scot/publications/offshore-wind-potential-project-capital-value-factsheet
4. SSE (2026) SSEN Transmission publishes new economic analysis highlighting transformative growth potential of £29bn grid investment programme. Perth: SSE plc. Available at: https://www.sse.com/news-and-views/2026/06/ssen-transmission-publishes-new-economic-analysis-highlighting-transformative-growth-potential-of-29bn-grid-investment-programme
5. Eastern Green Link 2 (2026) Eastern Green Link 2. Available at: https://www.easterngreenlink2.co.uk
6. Transport Scotland (2026) A9 Dualling Perth to Inverness: Programme details. Edinburgh: Transport Scotland. Available at: https://www.transport.gov.scot/projects/a9-dualling-perth-to-inverness/programme-details
7. SSEN Transmission (2026) Economic report. Perth: SSEN Transmission. Available at: https://www.ssen-transmission.co.uk/about-us/economic-report
8. Construction Industry Training Board (CITB) (2026) Construction Workforce Outlook: Scotland 2026-2030. Available at: https://www.citb.co.uk/cwo/reports/cwo_report_scotland.pdf

View on Scottish Water Internal Capacity

1 Key Question:

1.1 Does Scottish Water have the internal capacity to deliver the level of investment required in SR27?

2 Overall Conclusion

2.1 Scottish Water has considered its internal capacity to deliver the customer commitments and investment plan contained within the 2027-2033 Final Business Plan, as requested in the WICS Draft Determination.

2.2 This confirms that Scottish Water is in a strong position as we enter SR27, building on proven SR21 delivery, experienced and well-established internal resource and mature governance. This has been further strengthened by proactive steps that have been taken to enable strong delivery in SR27.

2.3 Whilst resource is in place to deliver the larger programme, work is underway to ensure sufficient capacity exists for portfolio and programme management, in addition to meeting the expected Regulatory reporting requirements. This is currently going through internal assessment and review processes.

2.4 Continued executive focus will be required throughout the period to balance capacity, skills, funding and delivery risks as the programme evolves. Scottish Water has demonstrated the ability to do so throughout SR21.

2.5 It should be noted that the view of capacity in this paper is based on the Final Business Plan. It is recommended that this be further reviewed upon receiving the Final Determination.

Table 1: Areas Considered

Area	Evidence and Implication for SR27 Capacity
Comparison with current levels of delivery	Scottish Water is currently delivering approximately £1.2bn in the final year of SR21, a level broadly comparable with annual investment expected during SR27. This demonstrates that SR27 builds from existing delivery experience. Scottish Water will scope the need any additional resource, going through established internal review and approval processes.
Core internal resource	Principal internal resources are in place to support investment delivery. This includes procurement, commercial, investment delivery, portfolio management, engineering and technical, water and wastewater service strategy, and strategy and regulation. Our current FTE across these areas today is 1,040 FTE.
Governance and accountability	Current delivery is supported by mature governance, clear leadership accountability, and proven delivery partnerships. Governance and assurance arrangements are being refined to ensure strong alignment with investment, delivery, benefits, efficiency, and performance outcomes required for SR27.
Operating model	Scottish Water introduced a new Operating Model in April 2026 to ensure readiness for SR27. The model puts the customer at the heart of the organisation and strengthens accountability, prioritisation and integration across core strategy, operational, portfolio and commercial activity.
Enterprise Delivery	The Enterprise Model adds capacity, integration and scalability for a larger and more complex programme during SR27 with Scottish Water acting as Capable Owner allocating resource along with our delivery partners. The partners work in full alignment with shared goals on our investment outcomes. Resource levels will be kept under review.
Business and Workforce Planning	Strategic Business and Workforce Planning, skills development, succession planning, talent pipelines and digital capability activities are underway to identify and address future capacity and capability requirements.

3 Capacity Risks and Mitigations

3.1 Scottish Water recognises that SR27 will increase the scale, complexity and pace of delivery. The main internal capacity risks and planned mitigations are summarised below.

Table 2: Main Internal Risks and Mitigation

Risk	Mitigation
Competition for specialist skills	Building on strong performance in staff retention, Scottish Water will focus on Business and workforce planning, recruitment, learning and development, talent and succession planning, and diligent testing of reward market.
Increased programme complexity	Introduction of the Enterprise Model well in advance of SR27 to aid planning and transition
Leadership capacity during change	Operating model implementation enables clear accountabilities. The majority of planned operating model changes will be completed prior to the commencement of SR27.
Delivery resource constraints	Phased resourcing plans, prioritisation mechanisms, and ongoing capacity review.
Future skills requirements and loss of key skills and knowledge	Investment in capability building, succession planning and targeted talent programmes aligned to areas of risk.
Final Determination impact	Capacity confidence is based on the level, profile of funding and outputs contained within the Final Business Plan. Any material change would require reassessment of capacity, prioritisation and delivery assumptions.

4 Conclusion

4.1 Based on the Final Business Plan, Scottish Water has confidence that it has the core internal capacity and organisational readiness required to deliver SR27. This confidence is based on comparable current delivery, established internal resource, strengthened governance and assurance, the new operating model, the Enterprise delivery approach, and active workforce and skills. Scottish Water will continue to monitor capacity against delivery requirements and emerging risks through established executive, performance and assurance arrangements. It would be prudent to review this if there is a material divergence between the Final Business Plan and the Final Determination in funding and outputs.

Annex 8
Customer Research

Contents

1 Introduction 3
2 Economic Context 4
3 Value for Money 5
4 Long-Term Thinking 6
5 The Importance of Meeting Outcomes 7
6 References 8

1 Introduction

1.1 Each stage of the business planning process has been supported and informed by customer research as set out by the Memorandum of Understanding between WICS, Consumer Scotland and Scottish Water. Research led by Scottish Water informed the iterative development of the Draft and Final Business Plans with our customers as part of the 'Evidence' pillar, and Consumer Scotland's deliberative study formed the basis of the 'confirmation' pillar. At the time of Final Business Plan (FBP) submission Scottish Water's programme was complete, with Consumer Scotland's in the process of undertaking a third and final research phase to seek feedback on the content of the FBP from customers. The Consumer Scotland programme is effectively now complete, with a summary report for Phase 3 now available and the final report covering the whole programme in draft.

1.2 The Customer Research Technical Appendix to the Final Business Plan identified three themes that emerged in customers' evaluation of Scottish Water's plans for SR27:

- Affordability of the charges, for themselves and for others.
- Value – the balance of cost and outcomes, and a desire for services not to deteriorate.
- Long-term thinking – concerns about future costs and future service deteriorations.

1.3 With the full programme of collaborative research now complete, these themes are broadly supported by the evidence as a whole and we have identified a further emergent theme around the deliverability of outcomes.

1.4 This Annex sets out the basis for these conclusions, drawing on research reports from across the programme. All key insights are referenced with a number in brackets eg (1), these references are to findings from the various research reports which have been quoted in a final section of this annex.

2 Economic Context

2.1 The SR27 research programme was undertaken against a backdrop of low awareness and engagement with water charges (1) and concerns about the cost of living and wider household finances (2,3). This context shaped customers consideration of the affordability of SR27 charges. Rather than considering water bills in isolation, customers tended to view them as part of a wider accumulation of rising costs, compounded by uncertainty around inflation 4,5). However, when focussing more specifically on water and wastewater charges customers' thoughts were nuanced. Although opinions on the system of charges itself could be mixed, there were positive sentiments around the current level of charges (6,7).

3 Value for Money

3.1 Throughout the research we heard from customers about the importance of value for money, learned about how customers approached this evaluation, and observed how customers understood and balanced outcomes against affordability. Customers were often disengaged from water charges and distanced from Scottish Water. However, as customers became more informed through the research process, they developed a greater awareness of both the costs involved in providing services and the need for bill increases to fund investment.

3.2 When discussing outcomes for SR27, customers consistently expressed desires to avoid a decline in outcomes, and to see outcomes at the very least maintained in the content of Scottish Water's three long-term challenges (8,9). When outcomes were discussed in the context of above inflationary price increases customers were overall open to the proposition (10) whilst also expecting outcomes to be balanced against affordability (11).

3.3 Notably, customers were averse to scenarios involving increased charges together with outcomes perceived as regressive (12,13). Vulnerable customers and those on low incomes may prioritise affordability, but most still rejected low-investment scenarios perceived to risk future service or quality (14).

4 Long-Term Thinking

4.1 Whilst customers recognised the need to balance affordability with investment in the process of developing the Final Business Plan, Customers recognised the benefits of taking a long-term view, with some arguing that bolder investment today could save money in the future and reduce the need for higher charges later (15,16). Customers could also be mindful of the impact of deferring investment on assets and outcomes (17,18,19).

5 The Importance of Meeting Outcomes

5.1 High levels of trust and satisfaction in Scottish Water were apparent, with customers generally entering research activities with positive perceptions (20,21,22). Trust was linked to awareness of Scottish Water's public ownership model (23,24,25), and a sense of pride around Scotland's drinking water quality (26,27,28).

5.2 As customers became more informed through the deliberative process, their focus shifted from whether outcomes were desirable to whether they were deliverable. Customers sometimes expressed a sense of protectiveness (29), in one case rejecting an early draft investment scenario on the grounds that the combination of poor outcomes and higher charges might harm Scottish Water's reputation, and burden future generations of customers (30).

5.3 Customers often appeared to assume that proposed outcomes would be achieved, trusting Scottish Water to deliver (31). Few doubts were expressed in the earlier phases of research. However, concerns began to emerge at the Draft Business Plan stage, where a minority of customers questioned whether the plan was achievable (32). Later in the process, some concerns were expressed around the potential for any rise in Scottish Water's costs to be passed to customers (33), and there was some questioning around the level of contingency built into Scottish Water's plans to withstand any unforeseen economic changes (34).

5.4 Consumer Scotland's research ultimately concluded "there was broad support for / acceptance of the Final Business Plan" (35), however as in previous stages, this was on the assumption that the ambitious outcomes could be achieved (36), with some customers expressing scepticism (37).

5.5 Overall, the research indicates that customers broadly accept the costs and outcomes set out in Scottish Water's business plan. However, this acceptance is underpinned by an expectation that the proposed outcomes will be delivered within the costs set out, and that decisions taken now will not defer costs, risks or service impacts into future periods.

6 References

1 SR27 Customer Expectations Final Report (Accent MR) p. iv

Household customers lack engagement with water charges, and, for some, the current charging system is seen as outdated and unfair, penalising low users and discouraging water conscious behaviours.

2 SR27 Quantitative Research Final Report (Create Clarity) p. 23

Customers are struggling – 61% of HH customers and 45% of NHH customers struggle to pay their household/business bills (including council tax bill/ business rates, energy bills, water bills), at least occasionally (80% for financially vulnerable and 45% for NHH). For 25% of HH customers, paying bills is a constant struggle or worse.

3 Consumer Scotland SRC27 Deliberative Phase 2 (IPSOS) p. 23

However, others felt that the cost-of-living crisis had not abated, people were still struggling, and that this should be taken into account when setting charges.

4 Consumer Scotland SRC27 Deliberative Phase 2 (IPSOS) p. 28

However, concerns were reiterated about the possibility of more significant rises in inflation in addition to the 4% increase.

5 Consumer Scotland SRC27 Deliberative Phase 3 (IPSOS) p. 14

Concerns about the Final Business Plan were based on: … Uncertainty of charges due to inflation, and cumulative impact of rising household and business bills.

6 SR27 Customer Expectations Final Report (Accent MR) p.65

Participants who viewed the charges as fair generally felt that the service provided by Scottish Water justified the cost. The reliability, quality of water, and the company's infrastructure were recognized as valuable, leading to a sense that they were receiving good value for money.

7 Consumer Scotland SRC27 Deliberative Phase 1 (IPSOS) p. 12

Despite some concerns about this system, participants generally found the water charges to be acceptable and fair, particularly with the understanding of how the money is spent

8 SR27 Customer Expectations Final Report (Accent MR) p.iv

Customers do not want to see a decline in service levels, and some are mindful of the impact of under investment in infrastructure in England leading to asset decline, sewer flooding and poor water quality.

Customers believe it is critical to maintain current service levels with focus on drinking water quality, continuous supply of water, asset maintenance, environmental pollution, sewer flooding, combined sewer overflows (CSOs), bathing and river water quality and fair costs.

9 SR27 Customer Expectations Final Report (Accent MR) p 87

customers want to see Scottish Water proactively making investment into infrastructure at a speed that avoids a decline in service levels (like England) and ideally future proofs the network against known longer term challenges

10 SR27 Customer Expectations Final Report (Accent MR) p 85

(d)espite participants being reluctant to see bills increasing at a challenging time they were not surprised and were largely willing to see small increases providing they addressed the long-term challenges and preserved the quality of service

11 Consumer Scotland SRC27 Deliberative Phase 1 (IPSOS) p.19

Participants therefore highlighted the need for an approach that balances affordability with maintaining service levels, is realistic in its assumptions, and honest with the public about the costs required.

12 SR27 Customer Expectations Final Report (Accent MR) p 6

The idea of charging a CPI +2% increase for this scenario was considered to be confusing and immoral against a background of customers demanding progress, pace and demonstrable infrastructure investment in SR27

13 SR27 Customer Expectations Final Report (Accent MR) p 86

However, the CPI +2% was seen as unreasonable for the perceived regressive investment outcomes outlined in this scenario

14 SR27 Customer Expectations Final Report (Accent MR) p55

The remaining vulnerable customers felt that Turquoise did not offer enough value and were concerned about the proposed outcomes, particularly in relation to leakage and burst pipes, and the impact on long term quality of service.

15 Consumer Scotland SRC27 Deliberative Phase 3 (IPSOS) p11

Some would have liked to see more investment now to avoid higher charges later

16 Consumer Scotland SRC27 Deliberative Phase 2 (IPSOS) p. 24

There should be more emphasis on the benefits of taking a long-term approach to planning, over short-termism. This related to a view among household participants that Scottish Water should generally be braver about investing more money into the system sooner, and a further assertion made by some participants that this would be likely to save customers money in the long-term.

17 Consumer Scotland SRC27 Deliberative Phase 3 (IPSOS) p.11

Some concern about “kicking can down the road” in delaying investment in some areas and impact of this in next review period.

18 SR27 Customer Expectations Final Report (Accent MR) p v

Customers do not want to see a decline in service levels, and some are mindful of the impact of under investment in infrastructure in England leading to asset decline, sewer flooding and poor water quality.

19 SR27 Customer Expectations Final Report (Accent MR) p.55

They preferred increased investment to fund more proactive change.

20 Customer Expectations Final Report (Accent MR) p.3

There is high satisfaction with service levels across all sample types. The everyday service is good for a significant number of participants in this qualitative sample and customers feel proud of Scottish Water believing the quality and supply is excellent and better than other countries.

21 SR27 Quantitative Research Final Report (Create Clarity) p.78

Trust - There is very high level of trust in Scottish Water with a 91% HH and 96% NHH top 3 box score (5 – 7 on the rating scale).

22 Consumer Scotland SRC27 Deliberative Phase 1 (IPSOS) p20

Participants reported mixed levels of knowledge about water and waste water services but were generally positive about the quality and supply of water in Scotland (based on lived experience and reinforced by the information presented).

23 Consumer Scotland SRC27 Deliberative Phase 1 (IPSOS) p13

Participants' views of Scottish Water's role in delivering services in Scotland were generally positive. The organisation was consistently compared more favourably to other water companies (particularly in England) due to its public ownership, perceived reliability, and apparent focus on reinvestment over profits.

24 SR27 Customer Expectations Final Report (Accent MR) p15

Scottish Water were felt to be a trusted, safe and reliable company and the public ownership model was reassuring given the English water company performance.

25 Consumer Scotland SRC27 Deliberative Phase 1 (IPSOS) p.9

There was a perception that private water companies in England have charged consumers too much for a poor service... This was contrasted with Scottish Water, which some participants understood to be publicly owned and described feeling proud of.

26 SR27 Customer Expectations Final Report (Accent MR) p. 15

Baseline satisfaction across the groups was good with customers talking positively about the quality and freshness of water in Scotland, the consistency of supply and how the overall water service experience was superior to England.

27 Consumer Scotland SRC27 Deliberative Phase 1 (IPSOS) p.6

Domestic customers were keen to emphasise the positives of Scottish drinking water, suggesting words such as 'Clean', 'Delicious', 'Fresh', 'Tasty', 'Pure', 'Natural', and 'Quality'. They described feeling very fortunate to drink Scottish water.

28 SR27 Customer Expectations Final Report (Accent MR) p. iv

Customers feel proud of Scottish Water believing the quality and supply is excellent and better than other countries.

29 SR27 Customer Expectations Final Report (Accent MR) p63

Spontaneous ‘better than’ framing and belief of inferior English service drives some sense of fear and feeling that Scottish Water infrastructure needs to be maintained/future proofed.

29 SR27 Customer Expectations Final Report (Accent MR) P12

This scenario is likely to be reputationally damaging for Scottish Water, eroding brand goodwill and burdening future generations.

30 SR27 Reconvened Research Report (Accent MR) p.33

The acceptability of these increases is based on recognition that the work must be done and is dependent on trust that SW would deliver on the outcomes promised...

31 SR27 Quantitative Research Final Report (Accent MR) (p.7)

A minority question whether the plan is achievable and raise issues over cost.

32 Consumer Scotland SRC27 Deliberative Phase 3 (IPSOS) p10

Both household and non-household customers also noted concerns that costs could rise further due to unforeseen circumstances, and that these costs could then be passed on to customers.

33 Consumer Scotland SRC27 Deliberative Phase 3 (IPSOS) p23

Hearing about the context during the SR21 period also made participants consider that future economic shocks could also derail the business plan for 2027-2033. This led to questions about whether Scottish Water have built in contingency to the Draft Business Plan.

34 Consumer Scotland SRC27 Deliberative Phase 3 (IPSOS) p14

There was broad support for / acceptance of the Final Business Plan – it was considered balanced and sensible by customers.

35 Consumer Scotland SRC27 Deliberative Phase 3 (IPSOS) p14

Assumption that outcomes will be met and WICS will hold Scottish Water to account on this.

Consumer Scotland SRC27 Deliberative Phase 3 (IPSOS) p.14

37 Scepticism about whether the ambitious outcomes could realistically be delivered.

Annex 9a
Summary of Scottish Water's Position

1 Summary

1.1 In its Draft Determination, WICS provided funding of CPI+2.0%, including a £168 million allowance for further investment in an increased range of outcomes.[1]

1.2 In response to WICS' Draft Determination, Scottish Water has reconsidered its operating and capital costs and investment needs carefully and has identified several areas where we believe that we can achieve improved outcomes for customers and reduce the costs incurred in doing so. In particular:

a. We have accepted the majority of WICS' challenge on forecast outcome levels, with much of this further stretch being underpinned by our stronger recent performance that has allowed us to re-base a number of measures, and some further stretch being enabled by the additional funding of £168 million provided by WICS in its Draft Determination;

b. We have identified £27 million of operating cost savings and £22 million of reduced maintenance capex requirements for returning PFI assets;

c. We have further identified £10 million of capex that we do not believe will be spent in the SR27 period at the Persley and Nigg sites following a review of scope;

d. We have accepted approximately £27 million of cost challenge on specific areas of the capital programme;

e. We believe that the forecast increase in pensions costs (£22 million) can be absorbed in a labour RPE allowance; and

f. We agree with WICS that £27 million of cost relating to infrastructure charges is not required due to lower forecast growth rates over the SR27 period.

1.3 However, our review of the Draft Determination finds that the other cost and scope challenges proposed by WICS are unsupported by the available evidence and should be reversed. Therefore, on a like-for-like basis with our Final Business Plan, this review has moved us to a position of requiring CPI+2.97% p.a. for materially improved outcomes. Figure 1 shows the funding movements (excluding the additional £168 million investment allowance), while Figure 2 shows the outcome improvements with and without the additional funding.

1.4 Note, we have excluded the additional funding in these figures in order to highlight where and to what extent Scottish Water has revised its position on a like-for-like basis.

[1] For these purposes, we have set aside the 0.3% uncertainty mechanism.

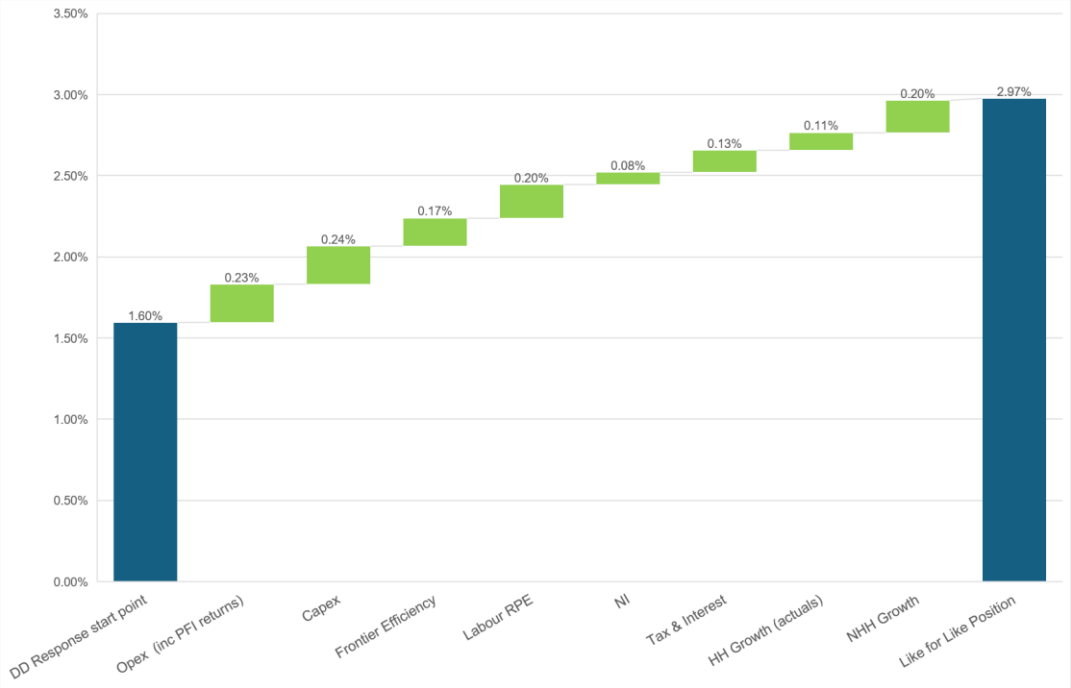


Figure 1: Scottish Water's revised position (like-for-like assessment with our Final Business Plan)

	Ref`	Metric	Remain aligned to FBP	Proposed DD Response Out-turn Position (2032/33)	Move To DD position	Decision Note	Add. £
Water	1.07	Total leakage - 3 yr average	411	410 / 405	385 Ml/d	Move towards ELL* + funding	£12m
	1.08	Zonal leakage in deficit zones - 3 yr	203		186 Ml/d	No zonal change	
	1.10	Per capita consumption (PCC) - 3yr	174		165 l/p/d	No DD stretch levers	
	1.11	Low pressure – 3yr	26	25	20 props	Rebase latest performance	
	1.12	Unplanned interruptions	7000	5500	5000 props	Rebase + profile to DD	
	1.13	Minutes lost	15	12	10 mins	Rebase + profile to DD	
	1.14	Repeat Interruptions to Supply	240	220	170 postcodes	Rebase	
	1.17	Taste & odour	0.51		0.46 contacts/pop	With extra funding	£15m
	1.18	Discolouration	1.90	1.80	1.33 contacts/pop	With extra funding	£5m
	1.21	Drinking water compliance	99.95	99.955 / 99.96	99.97 % fails/sample	With extra funding	£32m
Wastewater	1.24	Annual internal sewer flooding	1.48		1.27 number/props	Rebase	£50m
	1.25	Internal sewer flooding register	1.47	1.29	1.17 number/props	Rebase + extra funding	
	1.26	Annual external sewer flooding	11.16		9.52 number/props	Rebase	
	1.27	External sewer flooding register	11.88	11.38	10.83 number/props	Rebase + extra funding	
	1.29	Serious pollution (EPI Cat 1/2)	5		4 number	Accept DD	
	1.30	Total pollution (all categories)	34.6	32.5	31.5 number/length	With extra funding	£10m
	1.28	WwTW Compliance	96.4	96.7	97.2 % fails/580 works	With extra funding	£11m
	1.32	UIDs register	712	704	686 number	With extra funding	£33m

Key assumptions: dependent on £168m additional investment and WICS roll-back on >2% effective efficiency

*Economic Level of Leakage

Figure 2: Scottish Water revised outcome positions, with and without additional funding.

Note: the green triangles show the outcomes that we believe we can achieve without additional funding and the blue triangles show the position with additional funding.

1.5 Figure 1 has included a labour RPE to show our like-for-like position with our Final Business Plan. We disagree with WICS' conclusion that there is no evidence to support labour RPEs and we have some reservations about WICS' proposal (as provided to Scottish Water in response to a clarification question) that any other RPEs should be addressed via the IPPF. However, we recognise

the uncertainty in relation to RPEs and that, ideally, funding would be provided for these to the extent that they materialise during the period. We consider this issue further below. As a result, we remove the labour RPEs from a revised base position which would give us a required unconditional charge cap of CPI+2.77% per year.

1.6 We next considered how best to address several remaining issues, including:

- WICS' proposal of an additional £168 million of funding to achieve further progress on the outcomes that matter to customers;
- The limited provision for Real Price Effects in the Draft Determination and WICS' suggestion that these might be addressed via the IPPF process;[2]
- A revised understanding of the impact of declining rates of cash collection and movements in the rate of bad debt we are expecting to experience, which we estimate reduces our cash available to invest during the period by approximately £81 million; and
- The potential for a lower rate of household growth than assumed in the Draft Determination to reduce revenues and therefore the cash available to invest further.

1.7 First, we considered WICS' proposal of a further £168 million of investment. Figure 2 highlights the additional progress on outcomes that we believe can be made with this funding in place. We agree with WICS that these incremental outcomes are beneficial, supporting outcomes that customers and quality regulators have told us are priorities, but we note that this has a 0.4% per year impact on the required charge path for customers. Taking into account the findings of our customer research, we believe this funding and the improved outcomes are desirable and so should be included in the unconditional charge cap, which will increase to CPI+3.17% per year as a result. However, should there be affordability concerns with respect to the overall level of the charge control, we believe this inclusion might need to be revisited.

1.8 Next, we consider how the three other factors (set out above) which will influence the (real) funding that Scottish Water has available to invest over the period and that are outside our control, should be addressed. In our view, it is essential that these factors are assessed, quantified and addressed in a way that is transparent and objective to ensure that all water sector stakeholders, including Scottish Water's customers, have a clear understanding of the impact of them and the difficult trade-offs that dealing with them requires.

1.9 To the extent that no allowance is included for RPEs, changes in household growth rates and movements in cash collection/bad debt rates in the charge control, these either become a de facto additional efficiency challenge for

[2] RPEs are beyond Scottish Water's control and are applied in order to effectively adjust CPI for the actual rate of inflation that a water company can expect to face due to the basket of goods and services that it uses. Charge controls are indexed to CPIH (as a measure of the general rate of inflation in the economy) to ensure that the real purchasing power of the regulated company is maintained. However, it is widely recognised that CPIH, which is calibrated to reflect the rate of inflation faced by the average consumer in the UK economy, is not necessarily reflective of the actual rate of inflation that a regulated company may face because the inputs that a regulated company purchases differ from those purchased by an ordinary consumer.

Scottish Water or, they must be managed through a reduction in the capital programme.

1.10 In our Final Business Plan, we included an up-front provision for labour RPEs and requested that WICS consider how to deal with other (energy and materials) RPEs in its Draft Determination. WICS' provisionally found there to be no evidence to support labour RPEs and, therefore, made no specific allowance for these. It also made no allowance for materials RPEs. WICS did make some limited provision for energy RPEs and pension costs via an uncertainty mechanism of 0.3% during the last three years of the SR27 period. WICS indicated that all other RPEs should be addressed via the IPPF, i.e. via a reduction to the investment programme.

1.11 One approach would be to estimate the potential impact of these factors and include an up-front allowance in the charge control for them. Our analysis indicates that Scottish Water can expect to be affected by RPEs of around 0.5% to 0.7% per year on operating and capital costs, respectively, while the potential impact of the cash collection/bad debt issue is around 0.2% and that of slower household growth during the SR27 period is also around 0.2%.

1.12 Figure 3 shows the impact that these factors might have if they were included in a charge control.

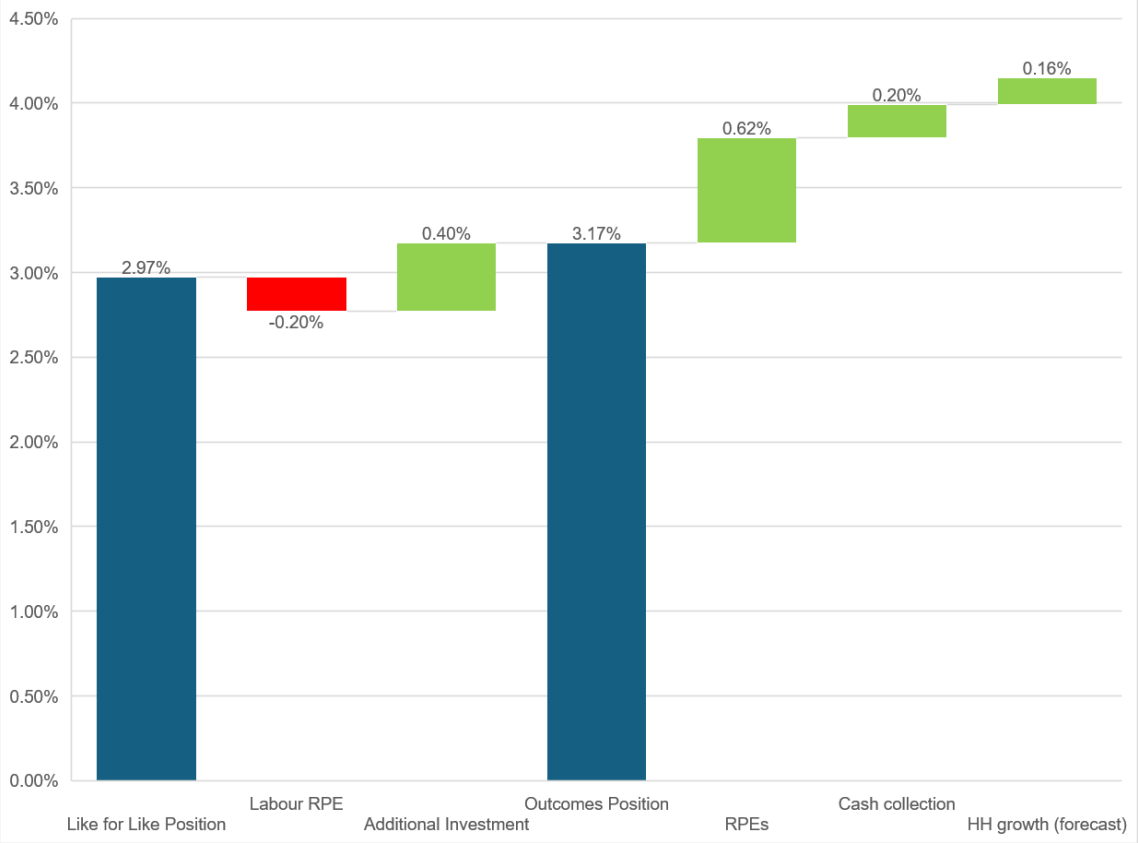


Figure 3: Revised charge control, taking into account additional investment and uncertain factors

1.13 However, we have two concerns with this approach. First, we note that this risks being unaffordable to our customers. Second, we recognise that each of the RPE, cash collection/bad debt and household growth issues may not materialise each year and may under- or over-shoot our estimates over the period as a whole.

1.14 Therefore, we propose a balanced approach to protecting customers in terms of both price and outcomes, which builds on WICS' suggestion that the IPPF be used to make adjustments in response to cost challenges. This is an uncertainty mechanism which includes:

- An ex-ante, agreed approach to calculating the impact of RPEs[3], household growth rates and the cash collection/bad debt issue on the cash that Scottish Water has available to invest, to ensure transparency to all water industry stakeholders and objectivity in estimating the impacts;
- A provision for prices to increase or decrease by up to 0.5% per year from year 3 of the SR27 period (i.e. 2029/30) onwards to cover the identified movements in costs, i.e. around half our estimates of the potential impacts of these factors; and
- An agreed rules-based framework for all remaining cost pressures to be addressed via adjustments to the investment programme and consequent adjustments to the outcomes via the IPPF.

1.15 We note that this approach has similarities to that suggested by WICS in its Draft Determination (which included an allowance of up to 0.3% extra on price for the last 3 years of the programme). However, it ensures a more complete, objective and transparent quantification of the impact of the factors which are outwith Scottish Water's control and could have a material impact on the funds that we have available to invest, and it allows for a greater proportion of these to be offset through a change in prices rather than a change in the investment programme. We believe this is important to protect the outcomes that are important to customers.

1.16 We set out a fuller description of our proposed uncertainty mechanism in Annex 9b.

[3] This agreed approach should be set out in a spreadsheet, which details the relevant cost indices and input weights etc to ensure absolute clarity.

Annex 9b: Uncertainty Mechanism

Contents

1 Summary 3
2 Real Price Effects (RPEs) 6
3 Revenue Collection Levels 9
4 Applying the Cap on Changes to the Allowed Increase in Charges 12

1 Summary

1.1 When determining how price controls should be calibrated, there is an inevitable need to make some assumptions about factors that are outside of the regulated company's control, but that can have a material bearing on what an efficient service provider could be expected to deliver. Economic regulators frequently take account of such factors when determining how price controls should be structured, and through the inclusion of 'uncertainty mechanisms' which provide for a degree of pre-determined updating of the price control as relevant new information becomes available. Updating for general inflation is a form of uncertainty mechanism that has been applied in UK economic regulation since its introduction around 40 years ago (as 'RPI-X'). However, as highlighted further below, the use of additional uncertainty mechanisms to take account of factors outside of a regulated company's control that can have a material effect on its financial position (and therefore what it can be expected to deliver) is also now well-established, particularly in relation to Real Price Effects and revenue recovery levels.

1.2 Consistent with the above, we propose that an uncertainty mechanism should form part of the SR27 price control which addresses the following two factors:

- **Real price effects (RPEs)**: inflationary pressures that affect Scottish Water's input costs that differ from those captured by CPI.

- **Revenue collection levels**: differences between the revenue requirement that Scottish Water has been identified as needing in order to deliver the SR27 plan, and the actual amount of revenue that is collected (which will be affected by actual growth levels and the bill collection rates achieved by councils, both of which are outside of Scottish Water's control).

1.3 The uncertainty mechanism would address two types of challenge that would arise if outturn levels in relation to the above were to be materially different to what had been assumed when the SR27 price control was calibrated:

- **An accountability challenge**: changes in relation to the above factors could have a material impact on what Scottish Water can be expected to deliver when operating efficiently. If this is not adequately reflected within the price control framework, Scottish Water's performance may be evaluated in an inappropriate way: what looks like outperformance or underperformance may in practice reflect exogenous factors rather efficiency improvements, or the absence of them, generated by Scottish Water. By adjusting for factors outside of Scottish Water's control, an uncertainty mechanism can sharpen incentives to improve efficiency by providing a more effective framework for accountability.

- **A funding challenge**: given the above, there is a material risk that Scottish Water could end up with revenue levels that would not support the efficient delivery of its SR27 investment programme. Given the scale of the benefits that plan is expected to bring for customers, there is a strong case for providing at least some scope for additional funding to be provided through charges during SR27 as part of managing that risk to delivering better outcomes. By the same token, if – because of factors outside of Scottish Water's control – the plan were to become less expensive to deliver than was assumed when the price control was set, an uncertainty mechanism could allow our customers to share in that benefit through lower bill levels than would otherwise have been allowed for.

1.4 We set out below how we propose that this uncertainty mechanism should be specified and applied in relation to RPEs and revenue collection levels. We have provided an accompanying Excel workbook which could be used to determine the overall impact of the uncertainty mechanism (given relevant outturn levels for RPEs and revenue collection) in terms of both accountability and allowed bill level changes.

1.5 In developing this proposed approach, we have taken in account a number of principles that we identified as important in this context:

- **Simplicity**: we recognise that the inclusion of an uncertainty mechanism as part of a Scottish Water price control would be a novel development. Given this, we have sought to keep the mechanism as simple as possible for SR27 by minimising the set of data inputs that are required for updating. Also, while there may be a case for adopting a more dynamic and complex calculation approach (for example, to allow for some updating of relevant forecast values within the period based on more up-to-date information), we have confined the adjustments to those based on a comparison between outturn values and the levels assumed when the price control was set. Given this, we propose that adjustments be made on a lagged basis such that differences in relation to year t are adjusted for in year t+2, and therefore that no adjustments would be made until the third year of the period.

- **Objectivity**: we are proposing to use statistical series published by the UK Government/ONS as the basis for RPE adjustments. For revenue recovery, we propose using the level of household revenue collection included in our audited accounts for the relevant year. The lagged approach that we are proposing is consistent with the timing of when data for the relevant year would be available from these sources.

- **Transparency**: we have provided an Excel workbook that clearly shows how the level of adjustment for each year of the control would be calculated, and could be explicitly used during SR27 for that purpose.

- **Limiting maximum average bill change impacts**: we have applied a limit to the net impact of the uncertainty mechanism adjustment in any given year of +/-0.5%.

- **Risk sharing**: the proposed approach shares the risk of changes to what is achievable in SR27 as a result of the factors included in the uncertainty mechanism in two ways:

    - By applying a lagged approach to adjustment such that it will be for Scottish Water to take account of the implications of the delay between when it is impacted by relevant changes (in terms of input cost and revenue collection levels) and when those changes result in an adjustment to the price control. It will be for Scottish Water to manage the effects of this (including the absence of any adjustment in relation to the final two years of SR27) through its management of the investment programme.

    - Through the cap on annual bill change impacts referred to above, which means that it will be for Scottish Water to take account of the implications of revenue impacts over and above that through its management of the investment programme (where appropriate through the IPPF process).

1.6 The following sets out why and how we propose that the Uncertainty Mechanism should be applied in each of the three areas identified above: RPEs, growth and bill collection levels.

2 Real Price Effects (RPEs)

2.1 Real Price Effects refer to the inflationary pressures that regulated companies face that differ from those captured by general measures of inflation (such as CPI). We comment in Annex 1 on the assessment of our proposed up-front RPE allowances in the Draft Determination. We recognise that there are inevitable difficulties in developing a reliable forecast of the extent to which our input costs are likely to be subject to exogenous inflationary pressures that differ from what can be expected to be captured in CPI. Our focus here is on the potential for that divergence to have a material impact on what Scottish Water can be expected to deliver when operating efficiently. This does not rely on any particular view of what an appropriate up-front allowance for RPEs should be. Rather, it emphasises the potential for relevant outturn pressures to differ materially from what was assumed, and for this to have a material impact (positively or negatively) on Scottish Water's ability to deliver its plan when operating efficiently.

2.2 Given this focus on materiality, we propose that an SR27 uncertainty mechanism should cover the following areas:

- Labour RPEs: for opex and capex
- Energy RPEs: for opex and capex
- Materials RPEs: for capex

2.3 We have selected these RPEs given the share of opex/capex they relate to, and/or the likely potential range of movement that can be associated with the cost component (with this latter point particularly relevant to consideration of energy costs). We note that the scope of our proposed RPE coverage – labour, energy and materials costs – aligns with that used by Ofwat at PR24. We note, though, that our proposed RPEs would be measured against CPI (rather than CPIH), consistent with WICS' proposed approach to indexation for the broader charge control.

2.4 The table below shows the relevant percentages of opex and capex that these cost categories have been identified as accounting for, and the indices that we proposed should be used to identify appropriate RPE levels during SR27. This is consistent with what we set out in chapter 6 of the Efficiency TA in our Final Business Plan (with the COPI index that we commented on in the Efficiency TA considered likely to provide an appropriate and objective means of tracking relevant materials cost pressures in this context).

Table 1: Relevant Percentages of Opex Identified by Cost Categories: Opex RPEs

Cost category	Opex share	Proposed RPE index
Labour: Opex	44.0%	EARN01: Average weekly earnings - Office for National Statistics

Cost category	Opex share	Proposed RPE index
		KAC7 – Public Sector Wages
Energy: Opex	11.0%	Industrial energy price indices - GOV.UK Large users

Table 2: Relevant Percentages of Capex Identified by Cost Categories: Capex RPEs

Cost category	Capex share	Proposed RPE index
Labour: Capex	44.6%	EARN01: Average weekly earnings - Office for National Statistics K5CD – Construction Sector Wages
Energy: Capex	8.2%	Industrial energy price indices - GOV.UK Large users
Materials: Capex	32.0%	Construction output price indices - Office for National Statistics COPI – New Works Infrastructure (NWI)

2.5 In order to determine the impact of the RPEs it is necessary to identify the level of the relevant RPE index that should be treated as the reference point that underpinned the final determination (against which RPE index levels in SR27 can be compared).

- For labour and materials, we consider that – as with CPI – the appropriate reference point for assessing RPE movements during SR27 is 2024/25 (unless an up-front RPE adjustment was to be provided for in the final determination, in which case the appropriate reference point would be the 2024/25 value of the relevant RPE index uplifted to reflect the scale of the upfront adjustment).

- For energy, we consider that the reference point should be set in line with average energy costs over the period 2011/12-2024/25, with a percentage uplift to reflect the extent to which energy costs in SR27 are assumed to be above that historical average when allowances are set in the Final Determination. This would be consistent with the comparison shown in Figure 25 of the Draft Determination, which identifies the extent to which our Final Business Plan included forecast energy costs that exceeded the historic average level. Setting the reference point for energy cost RPEs on this basis would allow for consistency between the assumptions made in the Final Determination and the way in which the impact of energy cost RPEs is taken into account.[1]

[1] We note that it would not be appropriate to use 2024/25 as the reference point as the reference point for energy costs as the SR27 business plan was not developed (and allowances will not be set) on that basis.

2.6 The above information provides the basis for determining what the difference in the level of the revenue requirement in a given year would have been had the net effect of observed input price inflation (as measured by the above indices) been taken into account when the control was set. This involves:

- Determining the difference between the level of the RPE index for each relevant category (labour opex, labour capex, etc.) in the relevant price control year, and the level of that index in the year being used as the appropriate reference point (as set out above).

- Determining the relevant net change in each RPE index (which could be positive or negative), as the identified above relative to the change in CPI over the same period.

- Using the relevant net change in RPE value to determine an implied level of shortfall/surplus in the revenue requirement that was determined for the given year (as a result of actual RPEs being different from what had been assumed), by multiplying it by the relevant amount of opex or capex (i.e. the opex/capex allowance for the year multiplied by the relevant opex/capex share set out in the table above).

2.7 As set out in the Excel workbook we have provided as part of our proposal, the allowed change in the average bill level for the next year of the control is changed to so as to offset any implied revenue surplus or shortfall from RPEs to the extent that (a) it is not offset by the effect of the revenue collection adjustment referred to below; and, (b) it would not – together with the revenue collection adjustment – imply an overall adjustment that breached the +/-0.5% annual change cap.

2.8 The DESNZ energy data referred to above is published quarterly, at the end of quarter following that to which it relates. The labour and COPI index data referred to above would be available within that time frame. Given this, and – in line with the comments above – the emphasis we have put on simplicity and objectivity as guiding principles, we propose that RPE adjustments (and – as set out below – all adjustments under the uncertainty mechanism) would only be made in relation to year 3 of the control onwards. This would allow adjustments to be made on a full year basis, with any implied shortfall/surplus identified based on published information in relation to year t, being adjusted for in year t+2.

2.9 While this would mean that adjustments would be applied at a fairly significant lag, and would not have ‘caught up’ ahead of the end of SR27, we consider this to provide a balanced way of taking account of the principles set out above. In line with the comments made earlier, this implies that Scottish Water would need to take account of relevant input price inflation that was not captured within this process during the period by managing its investment programme accordingly.

3 Revenue Collection Levels

3.1 The SR27 price control will be set on the basis of an assessment of the level of revenue requirement that is consistent with the efficient delivery of the SR27 plan. However, in order to determine the bill profile that is consistent with that identified revenue requirement, assumptions need to be made in relation to revenue collection levels. This creates a material source of risk with respect to Scottish Water's ability to deliver the SR27 plan, because the amount of revenue collected in a given year could differ materially from the amount it was assumed would be available from bills when the price control was set.

3.2 This risk arises because of two underlying factors that are outside of Scottish Water's control:

- **Growth**: the growth assumptions that are made when setting the Scottish Water's price control are important because they directly affect the assumed number of billable properties that identified revenue requirements are treated as able to be recovered from. If the actual number of properties is lower (higher) than had been assumed, then – other things equal – revenue collection will be lower (higher) than the level WICS had identified as required for the efficient delivery of the plan.

- **Bill collection levels**: Even where growth is in line with what had been assumed when the price control was set, material under- or over-funding can arise (relative to the identified revenue requirement) because bill collection levels can differ significantly from what had been assumed. As Scottish Water is not responsible for billing, this represents a material factor outside of its control that can affect its ability to fund the SR27 plan.

3.3 These factors raise questions over the most appropriate 'form' of the price control to be applied to a water company. Ofwat recognised that water company costs are largely fixed in its decision to shift to setting a revenue cap, rather than a price cap, at PR14, and it has applied a revenue cap since then.[2] This anchors the determination of the control in the setting of an overall revenue requirement, in a context where it is recognised that the scale of this requirement is likely to be affected only to a relatively limited degree by relevant volume measures. We consider there would be a strong case for applying a revenue control approach to Scottish Water at SR33 as the same considerations apply, and such an approach would align much better with the underlying structure of Scottish Water's costs.

3.4 Economic regulators (including Ofwat) also typically recognise the scope for differences to arise between the level of revenue that a regulated company is allowed to earn in a given year, and the actual level that they recover. In line with that, there is widespread use in economic regulation of mechanisms that identify the level of over- or under-recovery in a given year (as Actual Revenue - Allowed Revenue), and provide for an offsetting adjustment to future revenue

[2] In practice, while Ofwat had applied a price control approach ahead of PR14, it had included mechanisms in earlier price controls aimed to take some account of the extent to which costs are likely to be fixed (notably, in its use of a Revenue Correction Mechanism).

allowances to address this.[3] Adjustments related to year t are typically made in year t+2, but may be spread over time if that would imply an adjustment that would be identified as unduly large.

3.5 We propose that revenue collection levels be taken into account alongside RPEs in an uncertainty mechanism. Revenue collection levels can have a material bearing on how Scottish Water's performance should be assessed (the Accountability challenge referred to above), because the actual level of revenue that the price control provides for may be materially higher or lower than that assumed when the price control was set. As a result, revenue collection levels could have a material bearing on Scottish Water's ability – while operating efficiently – to deliver the beneficial outcomes included in the plan (the funding challenge referred to above). We consider that the uncertainty mechanism set out here provides a balanced way of addressing these challenges in relation to revenue collection.

3.6 For simplicity, we propose that this mechanism focuses on revenue from households given the relative significance of uncertainties related to household growth forecasts and household bill collections rates in terms of overall levels of revenue recovery. We propose that the uncertainty mechanism operates as follows:

- Identify total revenue collected from households in the relevant price control year (year t). This figure would be taken from our audited regulatory accounts.
- Determine the difference between the level of actual household revenue recovered in year t (from above) and the level of household revenue that it was assumed would be recovered in that year when the price control was set (after taking account of the provision for bad debt that was assumed when the price control was set).[4] This difference would be the surplus or shortfall in revenue recovery in relation to year t.

3.7 In line with the proposed approach to RPEs, an adjustment would then be made to the allowed change in the average bill level for the next year of the control to offset the identified effect of the difference between the level of revenue recovered and the assumed revenue requirement to the extent that: (a) it is not offset by the effect of the RPE adjustment; and, (b) it would not – together with the RPE adjustment – imply an overall adjustment that breached the +/-0.5% annual change cap.

3.8 Our audited accounts, which would provide the household revenue figure for year t needed to determine the size of the adjustment, would be available by August in year t+1. Given this, the timing any adjustment could be applied on same timeline as proposed for RPEs. That is, the impact of the actual household

[3] While some mechanisms of this kind can include incentives aimed at improving performance related to bill collection, as Scottish Water is not responsible for bill collection we do not consider such arrangements to be relevant in this context.

[4] This deduction of the bad debt provision would ensure that actual receipts are being compared to expected receipts.

revenue recovery differing from what was assumed for year t of the control would be determined during year t+1, and adjusted for in year t+2.

4 Applying the Cap on Changes to the Allowed Increase in Charges

4.1 As the mechanism provides for an adjustment on a t+2 basis, there would be no adjustment in either of the first two years of the control, and the first adjustment calculations would result in a change to the allowed increase in charges in 2029/30. From that year onwards, as was set out above, we propose that there is an annual cap of +/-0.5% on the size of the adjustment that could be made to the allowed increase in the average bill level in any given year.

4.2 It is proposed that if that cap is breached, the remaining amount that would not be adjusted for in that year be included in a 'Revenue imbalance account', which could be positive (implying that there had been some level of over-recovery that had not been adjusted for) or negative (implying some unadjusted for under-recovery). This would provide an important tool for accountability, as it would provide a way of keeping track of the extent of under- or over-funding relative to what had been identified as required when the price control was set, as a result of the factors that the uncertainty mechanism covers. However, we also propose that this Revenue Imbalance Account be used when determining what adjustments should be made in subsequent years.

4.3 We propose that this be done in the following way:

- Determine the size of the net implied surplus or shortall in relation to year t from the following the approaches to RPEs and revenue collection described above.

- Add that shortfall/surplus arising in year t to the post-adjustment level of the Revenue Imbalance Account for year t-1 (i.e. after taking account of any adjustments that were made in t-1 under the uncertainty mechanism), in order to calculate the pre-adjustment cumulative imbalance value for year t (i.e. ahead of any off-setting adjustments).

- Determine the size of any offsetting adjustment to be made in year t+2 based on the (pre-adjustment) cumulative imbalance value for year t, subject to the annual cap of +/-0.5%.

- Deduct the t-2 adjustment from Revenue Imbalance Account in order to determine the post-adjustment cumulative imbalance value for year t (which would then be used when the year t+1 adjustment is being determined, in line with the second step above).

4.4 For example, the application of the annual cap could mean that there was a shortfall of £5million from year 1 that had not been taken into account when the adjustment relating to year 1 (t) was made to bills in year 3 (t+2). That -£5million imbalance would then be added to the surplus/shortfall that was identified for year 2 in order to determine the level of offsetting adjustment should be made (in year 4) in relation to that year. If, for example, a surplus of £5million was then

identified in year 2, adding the imbalance of -£5million from year 1 would cancel that out such that no adjustment would be required in relation to year 2.

4.5 This approach should allow for a smoother bill and funding profile than would be likely if each year was assessed in isolation. While the example above is clearly a simplified one, the broader point is that the approach allows for a cumulative surplus or shortfall from previous years to offset a shortfall or surplus related to a given year before any subsequent adjustment is triggered. The proposed workings of this are set out in the accompanying Excel workbook.