STRATEGIC REVIEW OF CHARGES 2027-2033: DRAFT METHODOLOGY APPENDICES

14 August 2024

WICS Economic regulation for Scotland's water

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Appendix 1 – Overview of the water industry in Scotland

This appendix provides further background information on the water industry in Scotland.

SCOTTISH WATER

Scottish Water is responsible for providing water services to around 2.6 million households and wastewater services to around 2.5 million households, which covers 98% and 94% of the Scottish population respectively.[1] The remaining customers are served through other arrangements, namely private water supplies in relation to water services and septic tanks in relation to wastewater services. Scottish Water charges most households for wastewater and drainage services under a single wastewater charge.[2]

Scottish Water is a publicly owned organisation. This means that Scottish Water is answerable through the Scottish Ministers to Scottish Parliament and to the people of Scotland.

SCOTTISH GOVERNMENT

The Scottish Government plays a central role in the water industry. It has three distinct roles:

- owner of Scottish Water;
- setting policy; and
- lender to Scottish Water.

Each role is covered below.

Owner

The Scottish Government acts as the owner of Scottish Water. They appoint the Non-Executive members of the Board.

Policy maker

The Scottish Government sets the overall policy for the water industry through Ministerial Objectives and Principles of Charging. The approach to policy in the Strategic Review of Charges (SRC) is covered in detail in section 3.3.

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[1] See section A of Scottish Water's annual return for 2023. The percentage of the population connected to water and wastewater is based on Scottish Water's reported population in section A, table A4 divided by the latest estimate of the total population of Scotland reported by the National Records of Scotland of 5,447,700 in mid-2022. National Records of Scotland (2024), *'Mid-2022 Population Estimates'*, webpage.

[2] Around 400 out of the 2.5 million households served pay separately for drainage services (see section P of Scottish Water's annual return for 2023).

As explained in section 4.4, the Scottish Government is undertaking work to develop policy for the water industry.

Lender to Scottish water

Finally, the Scottish Government acts as the lender to Scottish Water. Scottish Water can borrow up to a limit set by the Scottish Government in the Principles of Charging.

OVERVIEW OF WICS

The Water Services etc. (Scotland) Act 2005 established the Water Industry Commission for Scotland (WICS) as the economic regulator of Scottish Water. WICS is a non-departmental public body with an independent Board.

Fulfilling the duties set out for WICS in the 2005 Act involves three main activities:

- setting caps on charges for household customers and on wholesale charges for retailers (known as licensed providers) that serve non-household customers;
- monitoring Scottish Water's performance against the forecasts made at the time of setting charge caps; and
- overseeing the orderly functioning of the non-household retail market in Scotland.

Each activity is covered in turn below.

Setting charge caps

WICS sets caps on charges for household customers and wholesale charges for licensed providers through a multi-stakeholder, transparent and consultative process known as the SRC. The SRC is set out in more detail in chapter 3.

Monitoring Scottish Water's performance

WICS closely monitors the performance of Scottish Water. It publishes an annual assessment of Scottish Water's performance.[3]

WICS assesses Scottish Water's performance in several key areas, including the quality of the service provided to customers, whether Scottish Water is on track in delivering the investment needed to maintain and upgrade its asset base, and the level of operating costs incurred in the year.

Underpinning the assessment of Scottish Water's performance is the annual return, an annual information submission by Scottish Water to WICS which provides data and associated commentary on various aspects of Scottish Water's performance. WICS reviews each annual return in detail to ensure the information is of high quality.

[3] WICS (2024), *'Scottish Water's Performance 2022-23'*, 7 March 2024.

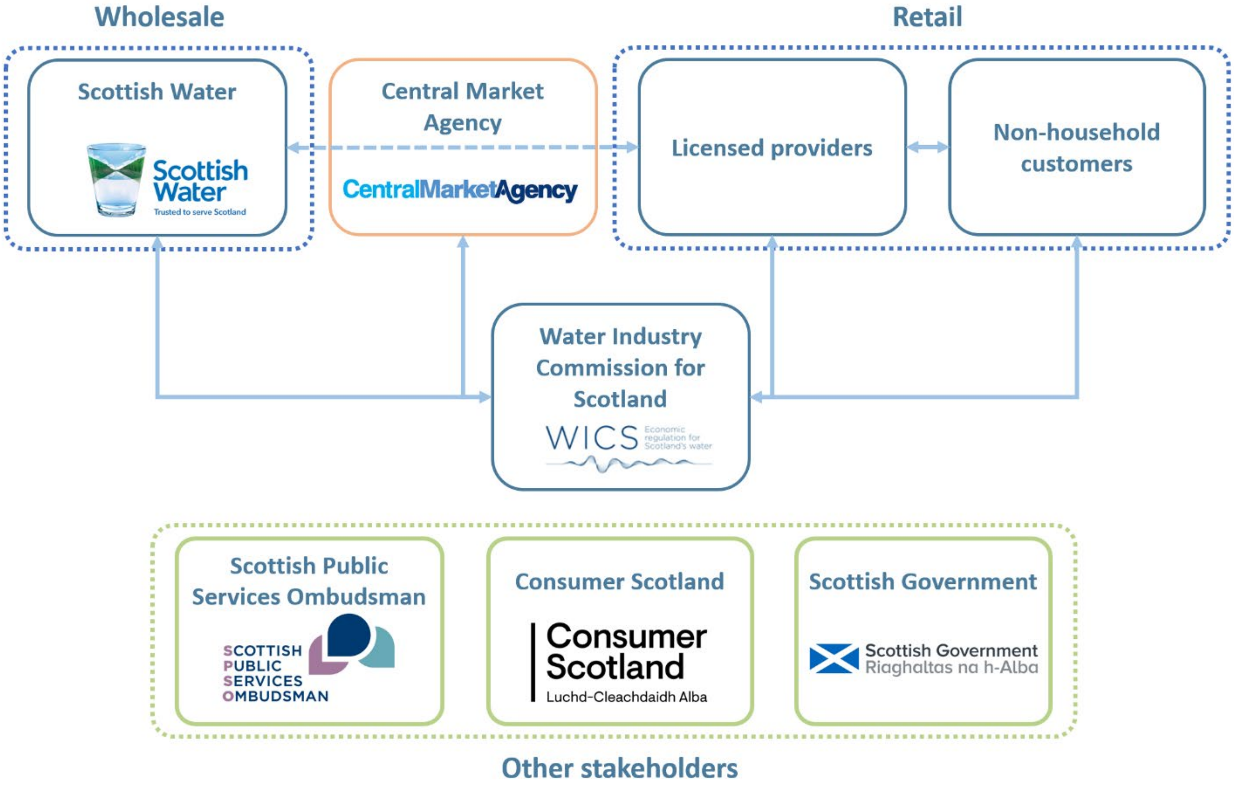
Overseeing the functioning of the non-household retail market

The Water Services etc. (Scotland) Act 2005 introduced a retail market in Scotland in April 2008 by opening the non-household water and sewerage market up to competition, allowing non-household customers to choose their licensed provider. These non-household customers comprise businesses, industrial users, public sector organisations and charities. The market participants are as follows:

- **Scottish Water** continues to operate and maintain the water and wastewater network and provides wholesale services to licensed providers.
- **Licensed providers** are responsible for performing the retail functions for which they are licensed[4] and are required to comply with a suite of market codes and licence requirements. Licensed providers are responsible for collecting water, sewerage (standing, volumetric and any unmeasured charge where a meter cannot be installed) and drainage charges (where applicable) from non-household customers, and remain liable for these charges to the wholesaler, Scottish Water.
- The **Central Market Agency** (CMA) manages and operates the retail market systems used by Scottish Water and licensed providers on a daily basis. This includes information regarding meter readings, transfer requests, the licensed providers that serve each non-household customer in Scotland, including the calculation of the wholesale charges that licensed providers owe Scottish Water.

[4] Retail services are limited to customer-facing activities such as meter reading, managing billing and payment arrangements, bad debt management, and customer enquiries and complaints. Some retailers offer additional value-added services such as advice on water efficiency and management of wastewater discharges.

Figure 1: Overview of the non-household retail market



As shown in Figure 1, WICS interacts with all stakeholders of the retail non-household market throughout the supply chain.

The 2005 Act gave WICS the power to grant licences to new retailers that wish to supply non-household customers in Scotland and to revoke existing licences. WICS' licensing powers are limited by an obligation to encourage an orderly participation in the market in a manner that is not detrimental to Scottish Water's core functions. WICS also monitors the compliance of licensed providers with their licence conditions and is responsible for ensuring market arrangements support a level playing field.

In order to protect customers, WICS requires licensed providers to provide non-household customers a set of default services to a particular standard (the default standards) at a price no higher than the default maximum tariff (regardless of their location or the size of their business). Default tariffs are set annually by WICS and represent the charge that would have been levied by Scottish Water had the retail non-household market not been opened to competition.

Licensed providers, therefore, compete in the market either by offering a lower price than the default tariff and/or by offering additional or more tailored retail services to their customers.

Governance and funding of WICS

These three activities of WICS are set out in the WICS Corporate Plan for the regulatory period. The current Corporate Plan covers the six years from 2021-22 to 2026-27.[5]

The WICS Corporate Plan also sets out:

- WICS' strategy;
- the funding that WICS will receive through the levies raised from Scottish Water and licensed providers; and
- the key performance indicators (KPIs) that WICS will use to measure its progress on delivering the requirements of the Corporate Plan.

The WICS Board submits the Corporate Plan to the Scottish Government for approval. This means WICS is accountable to Scottish Ministers, through the Scottish Parliament and, ultimately, to water and sewerage customers in Scotland.

[5] WICS (2020), *'Corporate Plan 2021-27'*, 4 December 2020.

Appendix 2 – Scottish Ministers' Commissioning letter

This appendix provides the Commissioning letter for the Strategic Review of Charges 2027-33.

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E: scottish.ministers@gov.scot

Scottish Government
Riaghaltas na h-Alba

Donald MacRae
Chair
Water Industry Commission for Scotland
Emailed to: dmacrae@wics.scot

Dear Donald,

COMMISSIONING THE STRATEGIC REVIEW OF WATER CHARGES: 2027-2033

I am writing to commission work to start on the Strategic Review of Charges ("the Review") for the period 2027-2033. This letter sets out Scottish Ministers' preferred approach to the Review, building on the successes of previous Reviews, which have ensured a financial and regulatory environment within which Scottish Water has significantly improved levels of efficiency and service delivery. The circumstances within which this Review is taking place are unprecedented – in terms of climate change impacts, nature crisis, ageing assets and economic circumstances. These circumstances should be reflected in the approach that is taken.

Relevant to the Review are the three missions that the First Minister has set out in his Policy Prospectus. I have set them out again here given the key relevance for the water sector vision and Scottish Water in particular:

- Equality: Tackling poverty and protecting people from harm
- Opportunity: A fair, green and growing economy
- Community: Prioritising our public services

Further to consideration of these three missions, the Review needs to respond to:

- The challenges of a changing climate on the industry both in terms of mitigation and adaptation,
- The risks associated with Scottish Water's ageing asset base,
- The next cycle of River Basin Management Plans for Scotland,
- Our commitment to aligning with new EU legislation in the best interests of Scotland, including the recast Drinking Water Directive and the imminent Urban Wastewater Treatment Directive,
- The ongoing economic situation and cost of living crisis; and
- The need to move to nature-based solutions that deliver on responses to climate change, the nature crisis, environmental protection and green spaces for the enjoyment of Scotland's population.

In conducting the Review, Ministers look to the Water Industry Commission for Scotland (the Commission) to build on the partnership arrangements with Scottish Water, Consumer Scotland, SEPA, DWQR. In particular, they expect the Commission to enhance and embed its commitment to working with Scottish Water according to the Ethical Business principles[1]. We expect the Commission to work constructively with Scottish Water to collectively ensure the best outcome for Scotland. Those arrangements have developed and evolved over successive reviews to the benefit of customers.

1. Conducting the Strategic Review of Charges

Ministers request that the Commission undertakes a Strategic Review of Charges for the six-year period 2027 to 2033. The **Final Determination should be published by 31 October 2026** at the latest to ensure time for Scottish Water to prepare its charging schemes and submit them to the Commission for its approval, and then implement them in time for issuing via Council Tax bills in March 2027. Ministers would welcome sight of a **Draft Determination by June 2026**, but are open to discussion on this timing.

Ministers request that the Draft Determination sets out a range of possible charge paths for both the domestic and non-domestic sectors for the services provided by Scottish Water: drinking water, sewerage and drainage. Ministers want the Review to provide them with the necessary information to appreciate the progress towards objectives and the level of risk of service failure associated with different levels of investment in the short, medium and long terms. In calculating the range of charge paths, for planning purposes the Commission should assume that similar levels of lending to 2021-27 period will be made available (around £1.03 billion).

As the industry is aware, Scottish Ministers recently consulted on policy proposals (Nov-Feb 2024) to equip the Water Industry with the necessary powers to ensure that essential water, wastewater and drainage services can continue to be provide in a changing climate. **The Review must remain cognisant of ongoing policy development and any resulting legislative changes.** Ministers will confirm the extent of changes required in their final Ministerial Objectives.

Ministers request that the Commission ensures, together with water industry stakeholders, that consumers, communities and the environment are placed at the heart of this Review. They expect that the consumers are engaged throughout this process and that the Commission can demonstrate that Final Determination commands consumers' support.

2. Principles of Charging

Ministers recognise that their Principles of Charging for previous regulatory periods have provided a framework which has secured significant stability and clarity for

[1] Ethical Business Regulation and Ethical Business Practice – set out how regulators can deal with asymmetry of information, and evolve from an adversarial relationship to a collaborative one with the regulated entity.

Scottish Water, its customers and stakeholders. The Principles of Charging for the 2027-33 regulatory period will be an evolution of those that currently apply during the 2021-27 regulatory period, and request that the Commission takes these as their starting point with minor amendments (included in Annex B).

Ministers will consult on **Draft Principles of Charging for 2027-33 in early 2025**, and will confirm the final Principles of Charging following the next Scottish Parliament election (likely by September 2026). As in previous periods, the Principles of Charging will indicate the level of finance (lending) they are willing to make available in support of the investment programme.

To ensure continuity, Ministers request that the Commission considers measures that ensure a smooth transition of investment activity between and beyond regulatory periods (current 2021-2027 period to the 2027-33 period being considered in this Review). This is necessary to ensure that supply chains can respond to the investment challenges in the most effective and efficient ways.

3. Statement of Ministerial Objectives

The Ministerial Objectives will be an evolution of those that currently apply during the 2021-27 regulatory period, and Ministers request that the Commission takes these as their starting point with minor amendments (included in Annex C). **Ministers will consult on their draft Ministerial Objectives during 2025**, but due to the Scottish Parliament election will only be able to finalise their objectives by October 2026.

Scottish Ministers will consider their Objectives for the water industry for the regulatory period 2027-33 in light of the emerging challenges facing the industry and emerging policy priorities following the consultation (Nov-Feb 2024). Ministers welcome the Commission's ongoing commitment to, and engagement with, this policy development work.

Ministers will their set their Objectives in the context of the water industry vision describing the longer-term nature of the industry and what it can achieve. The Commission played an important part in the development of that vision and should continue to consider it as the set of outcomes towards which the industry must make clear and demonstrable progress.

Ministers also recognise that the coming regulatory period will present some important challenges to Scottish Water and accordingly invite the Commission to work with Scottish Water to ensure they are properly addressed. These are attached at Annex A.

Ministers expect that the outputs necessary to achieve their Objectives reflect the best possible value for money in terms of the improvement in outcome achieved for the investment made. Average annual expenditure on the investment programme should remain of a size that allows efficient delivery whilst facing up properly to the challenges the industry and its wider supply chain faces.

With the advice from the Investment Group, Ministers expect a suitable governance structure be developed which identifies, on a rolling basis, the outputs necessary to deliver their Objectives. Scottish Ministers request that the Commission work with Scottish Water to establish a monitoring framework and process to review the delivery against these Objectives during the Regulatory Period.

Consistent with Ministers' policy of continuity of investment, as set out in the policy prospectus of 2023, and the development of the longer-term vision for the water industry, draft Objectives for the subsequent period 2033-2039 and beyond should also be developed. These must demonstrate how they will contribute to the Government's priorities as set out earlier and make clear and demonstrable progress towards delivering the longer-term vision.

Scottish Water will also be required to continue to meet their statutory obligations in responding to Net Zero and should ensure systematic monitoring and reduction of carbon emissions to ensure that reductions can be quantified. Ministers recognise that adapting services to the impact of climate change is an increasing challenge and wish an explanation to be included in the investment scenarios on the impact of delaying investment on the resilience of services.

4. Next Steps

In agreeing the timetable for the Review, Ministers ask that Scottish Water and its regulators ensure, in keeping with good practice, that there is appropriate consultation with the wider stakeholder group, communication with customers and for the Government's own public engagement. Ministers request that appropriate steering groups, led by the Scottish Government, are put in place to oversee the stakeholder engagement and to ensure that on-going policy development work is incorporated as required.

Ministers look forward to receiving regular updates on the progress of the Review.

I am copying this letter to the Chair of Scottish Water, the Chair of Scottish Environment Protection Agency, the Drinking Water Quality Regulator for Scotland, the Chair of Consumer Scotland and the Chair of the Competition Commission.

Yours sincerely,

MAIRI MCALLAN

Annex A

Investment Challenges

Capital Maintenance – Over this and future regulatory periods, Scottish Water should continue the transition to a risk-based approach to maintaining the overall condition and performance of its assets to ensure no deterioration of service levels to customers over the long term. Ministers accept that capital maintenance is key to achieving and maintaining service levels and compliance with statutory obligations in relation to drinking water quality and the environment and to reflect customer priorities. They wish the Commission to ensure that there is a stable and sustainable funding regime, recognising the economic conditions prevailing and forecast, for this important part of the investment programme.

Resilience – Ministers recognise the progress Scottish Water has made in developing a strategic approach to identifying the work required to ensure the resilience of the network, not least to adapt to the impacts of climate change. They request that the Commission provides assurance that Scottish Water's approach is proportionate, fit for purpose over the long term and represents value for money for customers.

Strategic Capacity – Ministers wish to ensure that Scottish Water is properly financed and incentivised to provide strategic and local water, sewerage and drainage assets in a manner that does not place a constraint or restriction on the achievement of their housing and economic development targets. To achieve this Ministers look to the Commission to ensure that finance is available to Scottish Water for this purpose over the regulatory period and that the funding arrangements for additional capacity (including the Reasonable Cost Contribution) remain fit for purpose and strike the correct balance of cost between existing customers, new customers and borrowing.

Private Finance Initiative funded Projects - Ministers recognise that 4 PFI contracts (Seafield, Tay, Moray and Ayrshire) mature in the period 2027-33. Highland and North East have already returned and Daldowie and Dalmuir return in 2026 with Levenmouth the final PFI due to complete in 2040. Scottish Water has been asked to consider the options and costs for the future operation and funding of these assets. Ministers request that the Commission undertake a full examination of Scottish Water's approach to establishing the options and costs with an overall assumption that these assets should return to public ownership.

Partnership Projects – Ministers recognise the progress that Scottish Water has made in delivering improvements in partnership with other stakeholders, and in particular Local Authorities. They consider that, increasingly, delivering outcomes particularly in relation to drainage, the reduction of flood risk and compliance with bathing water standards will require Scottish Water to work closely with Local Authorities, Developers, landowners and communities. Ministers therefore request that the Commission ensures that the funding arrangements are sufficiently flexible so that Scottish Water can deliver to agreed timetables within partnership frameworks.

Supporting innovation – Ministers look to Scottish Water to contribute to inclusive and sustainable economic growth to which end they are encouraged to be innovative in their operation and with regards to capital enhancement and maintenance. In addition, Scottish Water is expected to support the Hydro Nation programme through their renewable energy (including hydrogen), and energy efficiency programmes and by working with communities and customers in Scotland for example to manage water demand or create drainage assets. Ministers therefore request that the Commission ensures that the financing and funding arrangements for Scottish Water's regulated elements create appropriate incentives towards efficient delivery of these objectives.

Security – Ministers recognise the importance of the security of Scottish Water's physical, operational and IT assets, and the increasing nature of threats particularly in relation to cyber attacks. They require that relevant security standards in relation to physical, personnel and digital systems as advised by Scottish Government Resilient Essential Services and Drinking Water Quality Regulator, should be met.

Appendix 3 – Meeting the requirements from the Commissioning Letter

This appendix sets out the requirements from the Commissioning letter and how we have addressed them in our methodology.

What does the Commissioning letter require?	How does our methodology address this?	Where in the methodology is it addressed?
The Review needs to respond to the challenges of a changing climate on the industry both in terms of mitigation and adaptation	Our proposed approach recognises these challenges and ensures that Scottish Water will have flexibility to respond. Investment will continue to be defined on a rolling basis through the SGIG governance process, enabling Scottish Water to respond to emerging challenges including those relating to climate change. Furthermore, our regulatory framework will enable Scottish Water to adopt different ways of working to address the challenges posed by a changing climate.	Chapters 4 and 14
The Review needs to respond to the risks associated with Scottish Water's ageing asset base	Our proposed approach sets an expectation for Scottish Water to develop detailed bottom-up evidence on future asset replacement to complement the top-down analysis conducted for SRC21. As part of this, Scottish Water should provide a measure (or measures) of asset condition across its asset base and, as far as possible, translate the impact of maintenance activities on asset condition into tangible consequences that customers will understand.	Chapters 4, 10 and 14

What does the Commissioning letter require?	How does our methodology address this?	Where in the methodology is it addressed?
The Review needs to respond to the next cycle of River Basin Management Plans for Scotland The Review needs to respond to our commitment to aligning with new EU legislation in the best interests of Scotland, including the recast Drinking Water Directive and the imminent Urban Wastewater Treatment Directive	We expect Scottish Water to set out its proposals for investment and nature based solutions to meet the Objectives of the Scottish Ministers in its business plan. We will then use this information to set an investment baseline in our Final Determination. The baseline will then provide the reference point for investment that progresses through the revised Scottish Government Investment Group (SGIG) governance process to define the investment programme on a rolling basis.	Chapters 6 and 14
The Review needs to respond to the ongoing economic situation and cost of living crisis	Our proposals emphasise the importance of Scottish Water evidencing the investment it requires and playing its part in improving efficiency, to reduce the impact on customer charges. This will be important recognising these challenging economic times. Furthermore, our proposed approach of setting a real charge cap over the regulatory period will continue to provide flexibility, allowing Scottish Water to profile charges in response to material changes or specific circumstances such as the cost of living crisis.	Chapters 4, 8, 11, 13 and 14
The Review needs to respond to the need to move to nature-based solutions that deliver on responses to	Our proposed approach encourages Scottish Water to adopt different ways of working to address the	Chapters 13 and 14

What does the Commissioning letter require?	How does our methodology address this?	Where in the methodology is it addressed?
climate change, the nature crisis, environmental protection and green spaces for the enjoyment of Scotland's population.	challenges posed by a changing climate. We will encourage Scottish Water to work in partnership with others to find better solutions for customers and the environment. These include nature-based solutions such as catchment management and adopting blue-green infrastructure to deal with excess surface water. Such solutions can deliver broader benefits such as reduced greenhouse gas emissions and enhancing Scotland's natural and social capital.	
In conducting the Review, Ministers look to…the Commission…to build on the partnership arrangements with Scottish Water, Consumer Scotland, SEPA, DWQR. In particular, they expect the Commission to enhance and embed its commitment to working with Scottish Water according to the Ethical Business principles. We expect the Commission to work constructively with Scottish Water to collectively ensure the best outcome for Scotland.	We have committed to following the principles of Ethical Business Practice and Regulation (EBP&R) for SRC27 and will continue to build upon the 'Team Scotland' approach adopted for the policy development work with the Scottish Government and Scottish Water.	Chapters 4 and 5
Ministers request that the Draft Determination sets out a range of possible charge paths for both the domestic and non-domestic sectors for the services provided by Scottish Water: drinking water, sewerage and drainage.	The methodology sets out principles that Scottish Water could apply to allow for a range of charge paths that provides Ministers with the necessary information to understand the progress towards the objectives and the	Chapter 13

What does the Commissioning letter require?	How does our methodology address this?	Where in the methodology is it addressed?
Ministers want the Review to provide them with the necessary information to appreciate the progress towards objectives and the level of risk of service failure associated with different levels of investment in the short, medium and long terms. In calculating the range of charge paths, for planning purposes the Commission should assume that similar levels of lending to 2021-27 period will be made available (around £1.03 billion).	level of risk of service failures associated with different levels of investment in the short, medium and long-term. These are: • The charge path scenarios should have one reference scenario, with Scottish Water identifying the projects or programmes of work that would be subtracted and/or added to the reference scenario in each of the other charge path scenarios, to allow us to set a baseline on any of the charge paths. • Other analysis may be required on alternative charge and investment scenarios to help inform the development of the objectives of the Scottish Ministers through the SRC27 future Investment Group.	
As the industry is aware, Scottish Ministers recently consulted on policy proposals (Nov-Feb 2024) to equip the Water Industry with the necessary powers to ensure that essential water, wastewater and drainage services can continue to be provide in a changing climate. The Review must remain cognisant of ongoing policy development and any resulting legislative changes.	Our methodology confirms that we will also ensure that our approach to the Strategic Review of Charges adapts to any changes proposed through the policy development work. Our proposed approach also provides flexibility as the Scottish Government's policy development work concludes and reflects impacts on investment, including	Chapter 4

What does the Commissioning letter require?	How does our methodology address this?	Where in the methodology is it addressed?
	in climate adaptation and mitigation, over the 2027-33 regulatory period and beyond.	
Ministers request that the Commission ensures, together with water industry stakeholders, that consumers, communities and the environment are placed at the heart of this Review. They expect that the consumers are engaged throughout this process and that the Commission can demonstrate that Final Determination commands consumers' support.	We will place full ownership on Scottish Water to develop its business plan and demonstrate that customers' priorities are appropriately reflected. By extension, this will ensure that our Final Determination of charges commands the support of customers and communities. A tripartite agreement between WICS, Scottish Water and Consumer Scotland will set out key principles underpinning the approach to customer involvement in SRC27.	Chapter 8
To ensure continuity, Ministers request that the Commission considers measures that ensure a smooth transition of investment activity between and beyond regulatory periods (current 2021-2027 period to the 2027-33 period being considered in this Review).	The investment programme will continue to be defined on a rolling basis through the SGIG, ensuring a smooth transition of investment activity between regulatory periods.	Chapter 14
Ministers expect that the outputs necessary to achieve their objectives reflect the best possible value for money in terms of the improvement in outcomes achieved for the investment made.	Our proposals will ensure that this is the case, through:	Chapters 13 and 14

What does the Commissioning letter require?	How does our methodology address this?	Where in the methodology is it addressed?
	• the requirement for a clear linkage between inputs, outputs and outcomes as part of the investment baseline; and • our proposed approach to efficiency, which involves a combination of different methods.	
Average annual expenditure on the investment programme should remain of a size that allows efficient delivery whilst facing up properly to the challenges the industry and its wider supply chain faces.	We will complete work to understand a top-down view of the size of investment programme that Scottish Water could deliver efficiently, recognising the capacity of the supply chain and Scottish Water's own capacity to deliver the investment programme. We propose working with Scottish Water to develop a scope of work in line with the principles of EBP&R.	Chapter 14
Scottish Ministers request that the Commission work with Scottish Water to establish a monitoring framework and process to review the delivery against these objectives during the Regulatory Period.	Our proposed approach is based on investment being identified on a rolling basis through the SGIG. We will work together with the stakeholders in the SGIG to revise the governance process in line with the expectations from the Commissioning letter.	Chapter 14
Scottish Water will also be required to continue to meet their statutory obligations in responding to Net Zero and should ensure systematic monitoring and reduction of	As part of developing guidance for Scottish Water's business plan, we are developing a template outlining areas that could be covered by performance measures.	Chapters 14 and 15

What does the Commissioning letter require?	How does our methodology address this?	Where in the methodology is it addressed?
carbon emissions to ensure that reductions can be quantified. Ministers recognise that adapting services to the impact of climate change is an increasing challenge and wish an explanation to be included in the investment scenarios on the impact of delaying investment on the resilience of services.	These will include measures to allow Scottish Water to demonstrate its progress against its current commitments such as reducing operational emissions by at least 75% by 2030. The methodology sets out principles that Scottish Water could apply to allow for a range of charge paths that provides Ministers with the necessary information to understand the progress towards the objectives and the level of risk of service failures associated with different levels of investment in the short, medium and long-term. This includes providing an explanation on the impact of delaying investment on the resilience of services.	
Capital Maintenance – Over this and future regulatory periods, Scottish Water should continue the transition to a risk-based approach to maintaining the overall condition and performance of its assets to ensure no deterioration of service levels to customers over the long term. Ministers accept that capital maintenance is key to achieving and maintaining service levels and compliance with statutory obligations in relation to drinking water quality and the environment and to	Our proposed approach sets an expectation for Scottish Water to develop detailed bottom-up evidence on future asset replacement to complement the top-down analysis conducted for SRC21. As part of this, Scottish Water should provide a measure (or measures) of asset condition across its asset base and, as far as possible, translate the impact of maintenance activities on asset condition into tangible consequences that customers will understand.	Chapters 4, 10 and 14

What does the Commissioning letter require?	How does our methodology address this?	Where in the methodology is it addressed?
reflect customer priorities. They wish the Commission to ensure that there is a stable and sustainable funding regime, recognising the economic conditions prevailing and forecast, for this important part of the investment programme.		
Resilience – Ministers recognise the progress Scottish Water has made in developing a strategic approach to identifying the work required to ensure the resilience of the network, not least to adapt to the impacts of climate change. They request that the Commission provides assurance that Scottish Water's approach is proportionate, fit for purpose over the long term and represents value for money for customers. Strategic Capacity – Ministers wish to ensure that Scottish Water is properly financed and incentivised to provide strategic and local water, sewerage and drainage assets in a manner that does not place a constraint or restriction on the achievement of their housing and economic development targets. To achieve this Ministers look to the Commission to ensure that finance is available to Scottish Water for this purpose over the regulatory period and that the funding	We expect Scottish Water to set out its proposals for investment and nature based solutions to meet the Objectives of the Scottish Ministers in its business plan. We will then use this information to set an investment baseline in our Final Determination. The baseline will then provide the reference point for investment that progresses through the revised Scottish Government Investment Group (SGIG) governance process to define the investment programme on a rolling basis.	Chapter 14

What does the Commissioning letter require?	How does our methodology address this?	Where in the methodology is it addressed?
Private Finance Initiative funded Projects - Ministers recognise that 4 PFI contracts (Seafield, Tay, Moray and Ayrshire) mature in the period 2027-33. Highland and North East have already returned and Daldowie and Dalmuir return in 2026 with Levenmouth the final PFI due to complete in 2040. Scottish Water has been asked to consider the options and costs for the future operation and funding of these assets. Ministers request that the Commission undertake a full examination of Scottish Water's approach to establishing the options and costs with an overall assumption that these assets should return to public ownership.	We also consider that it is appropriate to place additional information requirements on specific categories of projects, including Private Finance Initiative funded projects, recognising that Ministers have requested WICS undertake a full examination of Scottish Water's approach to establishing the options and costs of the 4 PFI contracts maturing in the 2027-33 regulatory period.	Chapter 14
Partnership Projects – Ministers recognise the progress that Scottish Water has made in delivering improvements in partnership with other stakeholders, and in particular Local Authorities. They consider that, increasingly, delivering outcomes particularly in relation to drainage, the reduction of flood risk and compliance with bathing water standards will require Scottish Water to work closely with Local Authorities, Developers, landowners and communities. Ministers therefore request that the Commission ensures that the funding arrangements are sufficiently flexible so that Scottish	For changes to operating expenditure resulting from the adoption of operational solutions instead of capital investment solutions, or from partnership arrangements with local authorities or other third parties, we expect Scottish Water to provide more detailed information to enable us to ensure that the funding arrangements are sufficiently flexible.	Chapters 13 and 14

What does the Commissioning letter require?	How does our methodology address this?	Where in the methodology is it addressed?
Water can deliver to agreed timetables within partnership frameworks		
Supporting innovation – Ministers look to Scottish Water to contribute to inclusive and sustainable economic growth to which end they are encouraged to be innovative in their operation and with regards to capital enhancement and maintenance. In addition, Scottish Water is expected to support the Hydro Nation programme through their renewable energy (including hydrogen), and energy efficiency programmes and by working with communities and customers in Scotland for example to manage water demand or create drainage assets. Ministers therefore request that the Commission ensures that the financing and funding arrangements for Scottish Water's regulated elements create appropriate incentives towards efficient delivery of these objectives.	Our proposed approach provides Scottish Water with flexibility in its investment planning, reducing the regulatory barriers to collaboration and innovation.	Chapters 4, 13 and 14
Security – Ministers recognise the importance of the security of Scottish Water's physical, operational and IT assets, and the increasing nature of threats particularly in relation to cyber attacks. They require that relevant security standards in relation to physical, personnel and	We expect Scottish Water to set out its proposals for investment and nature based solutions to meet the Objectives of the Scottish Ministers in its business plan. We will then use this information to set an investment baseline in our Final Determination. The baseline will	Chapters 4, 13 and 14

What does the Commissioning letter require?	How does our methodology address this?	Where in the methodology is it addressed?
digital systems as advised by Scottish Government Resilient Essential Services and Drinking Water Quality Regulator, should be met.	then provide the reference point for investment that progresses through the revised Scottish Government Investment Group (SGIG) governance process to define the investment programme on a rolling basis.	

Appendix 4 – Core and non-core categorisation in SRC06

This appendix provides further information on the categorisation of core and non-core activities for the Strategic Review of Charges 2006-10 (SRC06).

Table 1: Core and non-core categorisation in SRC06

Classification	Activities
Core	• Abstraction, treatment, storage, conveyance & distribution of potable water • Conveyance, treatment & disposal of sewage including public septic tanks • Quality control • Call centre for interruptions, quality problems, flooding • Customer information systems • GMS appropriate to interruptions, flooding, and infrastructure etc. • Supply pipe repair • Supply installation • Physical disconnection • Communication/education of flush/don't flush, reservoir safety • Retail contract management & systems • Customer information systems • Customer account management (key account management) • Customer meter reading • Customer billing • Customer revenue collection • Customer debt collection • Customer debt write-off • GMS appropriate to billing, complaints etc. • Metering • Disconnection notification
Non-core	• Added value services – insurance, bottled water etc. • Non-domestic septic tank emptying • Communication/education • Tailored service consultancy • Grey water • General engineering consultancy • Film location services • Forestry

Appendix 5 – Expenditure and Financial ratio definitions

This appendix sets out the definitions of the different categories of expenditure and the definition of the financial ratios that we will use for the Strategic Review of Charges 2027-33 (SRC27).

Table 2: Expenditure definitions

Category	Definition
Operating expenditure	Spending on ongoing, day-to-day activities required to provide water and wastewater services.
PFI expenditure	Regular payments to third-party organisations providing wastewater assets and services on behalf of Scottish Water for a period under legacy contracts.
Interest	The finance costs on Scottish Water's existing loans and additional borrowing that Scottish Water receives each year from the Scottish Government (less the interest on the loans repaid in the year). It is also net of any interest that Scottish Water receives on any cash balances that it holds.
Taxation	Corporation tax payable to HMRC on profits made during the financial year.
Repairs	Investment in fixing an asset to ensure that it can continue to operate.
Refurbishment	Investment in a renovation or overhaul of older or damaged equipment or replacement of parts within a piece of equipment to bring the asset back to a workable condition to extend the expected life of the asset.
Asset replacement	Investment in the replacement of an asset whether that be equipment, or whole process/site or section of infrastructure.
Enhancement	Investment that results in incremental improvements in levels of service provided or levels of compliance.
Growth	Investment to meet new demand.
Capital investment	Covers repair, refurbishment, asset replacement, enhancement and growth investment as defined above.
Capital maintenance investment	Covers repair, refurbishment and asset replacement investment as defined above.

Table 3: Ratio definitions

Ratio	Definition/rationale
Cash interest cover	A measurement of the ability of a company to meet its interest expenditure after deducting operating costs (pre interest) from revenues.
Cash interest cover (net of maintenance)	A measurement of the ability of a company to meet its interest expenditure after deducting operating costs (pre interest) and maintenance (repair, refurbishment and replacement) costs from revenues.
Cash interest cover (net of expensed investment)	A measurement of the ability of a company to meet its interest expenditure after deducting operating costs (pre interest) and expensed investment from revenues.
Gearing	A measure of the capacity of a company to raise additional debt against its assets, using the ratio of the company's net debt to regulatory capital value (RCV).
FFO: Net debt	A measurement of a company's debt compared to its operating cash flows (post interest).
FFO: Net debt (net of expensed investment)	A measurement of a company's debt compared to its operating cash flows (post interest) less expensed investment.

Appendix 6 – Regulatory practice on setting an efficiency challenge on operating expenditure

This appendix sets out the regulatory precedent on the approaches economic regulators use to identify the scope for operating expenditure efficiency.

OFWAT PR04 AND PR09

Ofwat's price review 2004 (PR04) and price review 2009 (PR09) approach to assessing operating expenditure relative efficiency uses statistical modelling and is based on companies' audited cost data. There are 4 econometric models for water activities and 5 for wastewater activities, as shown in Table 4. The models are based on well established relationships between factors such as population, geography, topography, assets and the level of operating costs. Each model reflects the different operating characteristics that drive costs for specific activities. In PR09, 3 models are updated, as shown in Table 5.

The explanatory variables reflect factors outside of management control that have a material impact on the operating costs of a company.

Table 4: Econometric models used in PR04

Econometric model	Modelled cost using dependent variables	Explanatory variables
Water resources and treatment	Resources and treatment functional expenditure (£m) less power expenditure (£m), less Environment Agency charges (£m), divided by resident population (millions)	Population, number of sources, distribution input, proportion of supplies from rivers
Water distribution	Log to base *e* of (distribution functional expenditure (£m) less power expenditure (£m), divided by resident population (millions))	Population, proportion of total mains length with diameter > 300mm
Water power	Log to base *e* of power expenditure (£m)	Distribution input, average pumping head
Water business activities	Log to base *e* of business activities expenditure (£m) plus doubtful debts (£m)	Number of billed properties
Sewer network	Log to base *e* of sewer network functional expenditure (£m) less PPP running costs (£m), less Environment Agency charges (£m), per kilometre of sewer for each area	Sewer length, area, resident population, holiday population

Large sewage treatment works	Log to base *e* of functional expenditure on sewage treatment at large works (£000) less Environment Agency charges (£000) and terminal pumping costs (£000)	Total load, use of activated sludge treatment, tight effluent consent for both suspended solids and BOD5
Small sewage treatment works	Weighted average industry unit cost £000s/(kg BOD5/day)	Works size, works type, load
Sludge treatment and disposal	Weighted average industry unit cost £000s/(thousand tonnes dry solids)	Weights of dry solids, disposal route
Sewerage business activities	Weighted average industry unit cost £/billed property	Number of billed properties

Table 5: Econometric models updated in PR09

Econometric model	Modelled cost using dependent variables	Explanatory variables
Water resources and treatment	Resources and treatment functional expenditure (£m) less power expenditure (£m), less Environment Agency charges (£m), divided by resident population (millions)	Population, number of sources, distribution input, proportion of borehole supplies
Water distribution	Log to base *e* of (distribution functional expenditure (£m) less power expenditure (£m), divided by connected properties (thousands))	connected properties, length of main
Sewer network	Log to base *e* of sewer network functional expenditure (£m) less estimated terminal pumping costs (£m), less Environment Agency charges (£m), per kilometre of sewer for each area	Sewer length, area, resident population, holiday population

Post-modelling adjustments for unmodelled costs are taken into account for the company operating factors not captured in the econometric models. Also, to account for statistical error, a reduction to the residual of 10% for water and 20% for sewerage is made.

Ofwat PR19 and CMA updates

Ofwat's price review 2019 (PR19) approach involves benchmarking operational and capital maintenance expenditure as well as some specific enhancement costs together as BotEx (base expenditure).[6] There are 5 econometric models for water and 8 for wastewater, covering activities of water resources, water network plus, wastewater network plus and bioresources, details of which

[6] Ofwat (2020), *'Final determinations models'*, 14 October 2020.

are listed in Table 6.[7, 8] They use data from Annual Performance Reports and business plans submitted by companies and other external sources.

Table 6: Econometric models used in PR19 updated by the UK CMA

Econometric model	Explanatory variables
Water resources plus 1	Number of properties, % of water treated complexity levels bands 3-6, weighted average density
Water resources plus 2	Number of properties, weighted average water treatment complexity, weighted average density
Treated water distribution	Weighted average density, lengths of main, number of booster pumping stations
Wholesale water 1	Number of properties, % of water treated complexity levels bands 3-6, weighted average density, number of booster pumping stations, lengths of main
Wholesale water 2	Number of properties, weighted average water treatment complexity, weighted average density, number of booster pumping stations, lengths of main
Sewage collection 1	Sewer length, pumping capacity, number of properties
Sewage collection 2	Sewer length, pumping capacity, weighted average density
Sewage Treatment 1	Load, % load treated in bands 1-3, % load with ammonia <3mg/l
Sewage Treatment 2	Load, % load with ammonia <3mg/l, % of load treated in band 6
Bioresources 1	Weighted average density, % load treated in bands 1-3, sludge produced
Bioresources 2	Sludge produced, number of sewage treatment works
Bioresources plus 1	Load, % load treated in bands 1-3, % load with ammonia <3mg/l
Bioresources plus 2	Load, % load with ammonia <3mg/l, % of load treated in band 6

The econometric models generate coefficients for modelled costs calculation. The predicted expenditure from the different models are then combined (what Ofwat calls 'triangulated') based on a weighted average of the results from each of the models.

[7] Ofwat (2021), *'Competition and Markets Authority referrals – Cost models: Regression water – CMA FD'*, 20 July 2021.
[8] Ofwat (2021), *'Competition and Markets Authority referrals – Cost models: Regression wastewater – CMA FD'*, 20 July 2021.

Ofwat adjusts for cost adjustment claims after the econometric benchmarking, allowing companies to reflect specific circumstances that have a material impact on costs. Finally, the triangulated wholesale costs are compared to the actual costs to determine the catch-up efficiency challenges.[9]

The PR19 models use cost data over an 8-year period from 2011/12 to 2018/19 for the econometric sample (i.e. calculating the model coefficients), and cost data over a 5-year period from 2014/15 to 2018/19 for the catch-up efficiency challenge calculation. The Competition and Markets Authority used the econometric models with some adjustments in the case of the PR19 appeals from Anglian Water, Bristol Water, Northumbrian Water and Yorkshire Water. The CMA used the same periods together with the more recent data from 2019/20. The CMA also set a different catch-up benchmark, as shown in Table 7.[10]

Ofwat PR24

Ofwat has further developed its econometric models to assess base expenditure for its price review 2024 (PR24). These models are covered in further detail in Ofwat's draft determinations for PR24. [11] We will review these further ahead of our final methodology.

[9] Ofwat (2019), *'PR19 final determinations: Securing cost efficiency technical appendix'*, 16 December 2019.
[10] Competition and Markets Authority (2021), *'Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations: Final report'*, 17 March 2021.
[11] Ofwat (2024), 'PR24 draft determinations – Expenditure allowances', 11 July 2024.

Table 7: Efficiency challenges set in different price reviews

Price Review	Sector	Years	Real Price Effects	Frontier	Catch-up Benchmark
Ofwat PR19	Water	2020-2025	0.47%[12]	1.1%	To catch up with the 4th company out of 17 water companies and the 3rd company out of 10 wastewater companies
CMA appeals PR19	Water	2020-2025	0.47%[13]	1%	Efficiency challenges to catch up with the upper quartile
Ofwat PR24	Water	2025-2030	adjustment for labour and energy costs with ex post true-ups	1%	Efficiency challenges to catch up with the upper quartile
Ofgem RIIO-ED2	Electricity Distribution	2023-2028	indexation approach with ex post adjustments based on materiality[14]	1%[15]	3-year glide path from the 75th percentile in 2023 to the 85th percentile in 2026
Ofgem RIIO-GD2	Gas Distribution	2021-2026	as above	1.2%[16]	3-year glide path from the 75th percentile in 2021 to the 85th percentile in 2024
Ofgem RIIO-T2	Gas and Electricity Transmission	2021-2026	as above	1.2%	Not applicable
WICS SRC21	Water	2021-2027	-	1%	Not applicable

[12] Calculated 5-year average from Ofwat FD models.
[13] Calculated 5-year average from CMA FD models.
[14] Ofgem (2020), *'RIIO-ED2 Sector Methodology Decision: Annex 2 Keeping bills low for* consumers', 17 December 2020.
[15] Ofgem (2022), *'RIIO-ED2 Final Determinations Overview document'*, 30 November 2022.
[16] Ofgem (2020), *'RIIO-2 Final Determinations - Core Document'*, 8 December 2020.

Appendix 7 – Regulatory practice on setting investment requirements

This appendix sets out the regulatory precedent on how economic regulators set efficient investment allowances.

OFWAT

Ofwat aggregates expenditure differently to WICS, distinguishing between base and enhancement expenditure. It defines base expenditure as the routine, year-on-year expenditure that companies incur in the normal running of their business to provide a base level of good service to customers and the environment.[17] It includes what we refer to as operating expenditure and asset maintenance expenditure. Ofwat also explains that it covers expenditure to comply with current legal obligations and expenditure to improve efficiency.

Ofwat uses statistical models to set the efficient level of base expenditure, which, as set out above, includes asset maintenance expenditure. These models seek to control for factors that drive differences in costs across companies, which are largely beyond the control of the company such as the company's size, population density and treatment complexity.

Ofwat defines enhancement expenditure as arising where there is a permanent increase or step change in the current level of service to a new 'base' level and/or the provision of services to meet new demand from customers. As such, Ofwat's definition of enhancement includes what we refer to as enhancement and growth investment.

Focusing on enhancement investment, like WICS, Ofwat recognises the importance of planning investment over the long-term. It introduced long-term delivery strategies, which companies prepare and present alongside their business plan submissions. Ofwat's expectation is that the new statutory requirements placed on companies under the water industry national environment programme (WINEP) in England and the National environment Programme (NEP) in Wales will inform these long-term delivery strategies. These long-term delivery strategies are based on an adaptive planning framework.[18]

Adaptive planning involves considering different scenarios covering a range of external factors that impact on investment requirements such as the extent of climate change and/or population growth. It is an emerging approach to investment planning which recognises the uncertainties of future challenges and is designed to be flexible. It is promoted by HM Treasury in its Green Book guidance for accounting for the effects of climate change and has been implemented by Ofwat in its PR24

[17] Ofwat (2022), *'Creating tomorrow, together: Our final methodology for PR24'*, 13 December 2022, p.76.
[18] Ofwat (2022), '*PR24 and beyond: Final guidance on long-term delivery strategies*', 6 April 2022.

methodology.[19] The aim of the approach is to identify the most efficient pathways possible to meet long-term outcomes, given future uncertainties, and identify the enhancement investment that is either no or low regrets, reducing the risk of inefficient investment. It therefore allows companies to identify the enhancement investment required over the regulatory period.

Ofwat requires companies to prepare comprehensive business cases for enhancement investment across all enhancement areas.[20] The business cases should provide sufficient and convincing evidence, covering:

- the need for enhancement investment;
- best options for customers;
- cost efficiency; and
- customer protection.

The remainder of this section focuses on the latter two areas: cost-efficiency and customer protection.

On cost efficiency, where there is investment that is comparable across companies, Ofwat uses statistical and unit cost models to determine efficient cost allowances. Ofwat also uses information from industry data bases and expert cost consultants to inform these comparative assessments.[21] For example, some companies, like Anglian Water,[22] have followed this benchmarking approach of comparing unit costs against its own database, the available unit costs of other companies as well as external consultants' cost libraries as part of their enhancement investment business cases.

Among the 40 enhancement models used in Ofwat's price review in 2019 (PR19), there are 13 sub-models in linear, logarithm or quadratic scales or unit cost method that model the total expenditure allowances in respective categories. There are also 6 median unit cost models which use the median as the benchmark level, as shown in Table 8.[23] Where the use of such models is unsuitable or not feasible, Ofwat undertakes more bespoke and in-depth analysis that is proportionate to the materiality of expenditure. The regulator refers to these as 'deep-dives', where proposed expenditure is material, and 'shallow-dives' in other cases.

[19] HM Treasury (2013), '*Green Book supplementary guidance: climate change and environmental valuation*', 21 April 2013.
[20] Ofwat (2022), '*Creating tomorrow, together: Our final methodology for PR24, Appendix 9 – Setting expenditure allowances*', 7 July 2022, p.23.
[21] Ofwat (2022), '*Creating tomorrow, together: Our final methodology for PR24. Appendix 9 – Setting expenditure allowances*', 7 July 2022, p.20.
[22] Anglian Water (2023), *'Our PR24 Enhancement Strategies. Part 1: Resilient to the risk of drought and flood*', 2 October 2023.
[23] Ofwat (2020), *'Final determinations models'*, 14 October 2020.

Some models listed in Table 8 may not be applicable for Scottish Water.[24] However, others could be adapted and used in Scotland to benchmark Scottish Water's costs against the costs of the companies in England and Wales.

Table 8: Regression and unit cost sub-models used in PR19 for enhancements

Model name	Model type	Cost driver
Lead standards: Step1	Log[25]	Number of lead communication pipes replaced for water quality purposes
Lead standards: Step2	Unit cost	Pipes replaced for water quality purpose
Metering 1	Linear	Combined number of optant and selective meters installed
Metering 2	Log	Combined number of optant and selective meters installed
Supply demand balance 1	Median unit cost	2020-25 SDB enhancement cost
Supply demand balance 2	Median unit cost	Leakage enhancement cost
Chemicals removal	Log	1. the population equivalent served by wastewater treatment works with a WFD_CHEM_IMP driver code (As necessary, we source the p.e. data from the European Commission WISE database[26]);
		2. the average proposed permit level for zinc
Event duration monitoring 1	Median unit cost	Installations
Event duration monitoring 2	Median unit cost	Permits
First time sewerage	Quadratic	Number of connectable properties served by s101A schemes
Flow monitoring 1	Median unit cost	New monitor installations & upgrades
Flow monitoring 2	Median unit cost	Investigations
Flow to full treatment (FFT) 1[27]	Linear	Number of schemes and cumulative FFT shortfall

[24] First time sewage is an obligation for wastewater companies under the Water Industry Act 1991 (s101A) which applies to England and Wales.
[25] Models in logarithm scale include log-linear and log-log models.
[26] The WISE Water Framework Directive database contains data for Scotland with River Basin District Code of UK01.
[27] Flow to full treatment (FFT) is a measure of how much wastewater a treatment works must be able to treat at any time. See further explanation at https://www.ofwat.gov.uk/flow-to-full-treatment-fft-explainer/. It is required in the water industry strategic environmental requirements (WISER) which is a guidance applies to England. This scheme is not required in Scotland, although Scottish Water does have projects for this purpose.

Flow to full treatment (FFT) 2	Standardised log	Number of schemes and cumulative FFT shortfall
Nutrients (Phosphorus removal) 1	Linear	Number of wastewater treatment works subject to a new or tightened consent and the population equivalent (p.e.) served by these works
Nutrients (Phosphorus removal) 2	Linear	p.e. and number of enhanced wastewater treatment works with a proposed consent at or below 0.5 mg/l
Spill frequency 1	Linear	Volume of storage each company is planning to construct
Spill frequency 2[28]	Log	Volume of storage each company is planning to construct, number of sites
Storm tank capacity 1	Log	Total storage volume
Storm tank capacity 2	Log	Total storage volume and the number of schemes

Ofwat has developed further enhancement models for its draft determinations for its price review 2024 (PR24), including through benchmarking individual investment schemes. These models are covered in further detail in Ofwat's draft determinations for PR24. [29] We will review these models further ahead of our final methodology.

On customer protection, Ofwat has introduced price control deliverables (similar to what we would call outputs) to enable them to hold companies to account for timely delivery of the outcomes and outputs that they promise. [30] In their guidance on price control deliverables, Ofwat provides examples of deliverables for different categories of investment, covering:

- for investment to increase water supplies, a deliverable could take the form of additional water available for use in Ml/d; and
- for investment to reduce storm overflows, a deliverable could take the form of additional storage provided (in m^3), number of sites or number of modelled spills reduced.[31]

Ofwat will use the price control deliverables to track delivery and return funding to customers where companies do not deliver the outputs that they have been funded to.[32]

THE CIVIL AVIATION AUTHORITY (CAA)

The Civil Aviation Authority (CAA) is responsible for the regulation of aviation safety in the United Kingdom. As part of its responsibilities, the CAA has powers to apply economic regulation to airport

[28] This log model with two cost drivers applies to Anglian Water only as requested by company after PR19 Draft Determination.
[29] Ofwat (2024), 'PR24 draft determinations – Expenditure allowances', 11 July 2024.
[30] Ofwat (2022), '*Creating tomorrow, together: Our final methodology for PR24*', 13 December 2022, p.18.
[31] Ofwat (2023), '*Information notice: IN23/05 further guidance on price control deliverables for PR24*', 4 July 2023.
[32] Ofwat (2022), '*Creating tomorrow, together: Our final methodology for PR24*', 13 December 2022, p.61.

operators that it deems have substantial market power.[33] Under these arrangements, the CAA applies economic regulation to Heathrow Airport, which involves the CAA setting:

- a price cap on the charges that Heathrow Airport collects from airlines; and
- the quality of services provided for those charges.

For the H7 price control, the CAA set the efficient level of investment based on Heathrow Airport's investment plan. The CAA assessed the proposed investment baseline from the plan in two stages:

- a structured needs assessment, involving allocating projects into categories according to the level of information provided and the overall business case for the project; and
- an assessment of what the efficient costs of the required investment which built on earlier advice from its technical advisors, Arcadis.

The latter assessment of efficient cost covered:

- engagement with Heathrow on the basis of the material contained in its H7 investment plan and the supporting information provided;
- conducting a review of how the costs were developed, including reviewing the integrity and calculations of costing for elements of projects/programmes and reviewing the scope of relevant projects; and
- benchmarking selected unit rates for standardised works, including reviewing the assumptions underpinning the proposed costs.

Based on its assessment, the CAA set an efficient allowance for investment of £3.6 billion (2020 prices), which was around £1 billion (20%) lower than what Heathrow Airport proposed in its investment plan.[34] The CAA segmented the investment plan into a 'core' and 'development' elements. The core element related to projects where the requirement, scope and budget had been agreed jointly with Heathrow and the airlines. The development element involved a separate governance process involving the airlines approving the investment.[35] Heathrow Airport appealed certain aspects of the CAA's proposed approach (specifically the capex incentives and the requirements for outputs for all projects) to the UK Competition and Markets Authority (CMA).[36]

[33] Civil Aviation Authority , '*H7 overview: We are developing the regulatory framework for Heathrow Airport Limited*', webpage.
[34] Civil Aviation Authority (2022), '*Economic regulation of Heathrow Airport: H7 Final Proposals Section 2: Building blocks'*, June, pp.75-76.
[35] Heathrow Airport adopts a 'Gateway' process, through which prospective capital investment projects progress from Gateway 0, where the need for investment is identified, to Gateway 8, where retrospective review of the delivered investment takes place. Gateway 3 is when a project transitions from 'development' to the 'core' programme. The Competition and Markets Authority (CMA) provided background on the Gateway process in the context of Heathrow Airport's appeal of the CAA's price control and the consequential licence modifications. See CMA (2023), '*H7 Heathrow Airport Licence Modification Appeals: Final Determinations*', 17 October 2023, p.440.
[36] In aviation, the appeal process differs from that in the water industry. In aviation, the appellant refers specific issues to the CMA on the grounds that the regulator's decision was wrong in law. The regime is known as appeals on merits. In the water industry, the appellant refers the full determination to the CMA, who then redetermines the charge caps.

The CMA found in favour of the CAA,[37] leading to the CAA confirming its approach in November as part of its guidance on the governance of investment.

The guidance sets out several requirements. We focus on three of these requirements, which we consider could have lessons for the water industry in Scotland, covering:

- standard information provision
- in-depth review of specific projects
- delivery obligations

Standard information provision

The CAA's guidance sets out a standardised set of questions or information that should be applied to all projects. This information is to help support the engagement between Heathrow and the airlines, where both parties must agree to the investment projects for a project to move from the development element of the investment programme to the core element of the investment programme. For each project, Heathrow has to provide information on:

- Project need
- Project outputs and delivery timetable
- Operational impact
- What will constitute completion of the project
- Options considered
- Risks/ opportunities
- Costs
- Quantifiable benefits and significant non-quantifiable benefits
- Standards and processes applied (e.g. asset management strategy and policy)

As part of the process, airlines can review and challenge common standards and processes that Heathrow applies across its investment programme. These include areas such as the approach to asset management, design and planning standards and the approach to risk management, all of which have an impact on project costs. Recognising that some of these standards and processes require specialist knowledge, the airlines can seek an independent view with reference to wider best practice. The selection of the reviewer is to be agreed between both parties, with the report provided to both parties at the same time.

In-depth review of specific projects

In addition to the standard information, projects that are more complex, costly or have a greater impact on airlines can be subject to a more detailed review to provide assurance to the airlines that Heathrow Airport has considered several key factors. These factors include:

[37] Competition and Markets Authority (2023), '*H7 Heathrow Airport Licence Modification Appeals: Final Determinations*', 17 October 2023, p.492.

- underlying drivers for the project;
- different solution options that have been considered, including the assessment of relative costs, risks, benefits and operational impacts of each option (a business case assessment);
- opportunities where Heathrow Airport has sought to seek further efficiencies by coordinating works with other schemes;
- the procurement process that Heathrow Airport has undertaken to secure value-for-money;
- benchmark cost information that Heathrow Airport has used to assure the efficiency of the proposed project; and
- the approach to identifying and managing risks.

The expectation is that such a review would require input from independent consultants with expertise in project or programme development and construction, to compare Heathrow Airport's approach against industry good practice. Heathrow is expected to produce a list of projects that are due to be proceed through the approval gate (Gate 3) in its investment process six months in advance of the year that the projects are due to reach the approval gate. This list forms the basis of projects that Heathrow and the airlines agree should be subject to more detailed review. There is no minimum cost threshold for projects that should be subject to review, recognising that some projects of a lower value may be more complex or have a critical impact on an airline's operations and therefore merit further review.

Delivery obligations

One of the areas that the Heathrow Airport disputed in relation to the CAA's Final Determination was the requirement for each project to have delivery obligations for all projects. In its appeal to the CMA, one of Heathrow Airport's arguments was that the requirement for delivery obligations for all projects was not targeted or proportionate and that the CAA was wrong in law or made an error.[38] As set out above, the CMA found in favour of the CAA.

Recognising the finding from the appeal to the CMA, the CAA requires all projects proceeding through the approval gate (Gate 3) to have delivery obligations. The delivery obligations are based on SMART objectives[39] and cover outputs and delivery timescales. These delivery obligations are to provide an objective means for establishing whether a project has been delivered in line with the assumptions that informed the original budget and delivery programme. They can cover individual projects and tranches of projects. The delivery obligations can also be based on outcomes, provided the outcomes can be defined using SMART metrics.

Heathrow Airport is also required to set out annually its performance against the delivery obligations, providing information on a project basis covering:

[38] Competition and Markets Authority (2023), '*H7 Heathrow Airport Licence Modification Appeals: Final Determinations*', 17 October 2023, p.441.
[39] Specific, measurable, achievable, relevant and time-bound.

- the baseline expenditure agreed at the approval gate;
- the delivery obligations agreed at the approval gate;
- performance against the delivery obligations once the project is complete; and
- the actual expenditure incurred.

OFFICE OF RAIL AND ROAD (ORR)

The Office of Rail and Road (ORR) is the economic regulator of Network Rail. The ORR conducts a process called a periodic review, which is equivalent to our Strategic Review of Charges (SRC), to determine what Network Rail is expected to deliver in relation to its operating, support, maintenance and renewal of the rail network and the funding that it requires to support these activities. The most recent periodic review was completed in 2023 (PR23) and covers the period from 1 April 2023 to 31 March 2029 (which ORR calls control period 7, CP7).

Through its periodic review process, the ORR only assesses funding required to deliver the efficient level of maintenance and renewals investment. Enhancement investment is developed, and the funding settlement agreed, outside of the periodic review under a 'pipeline approach' (led by the Department for Transport, rather than the ORR). The ORR continues to play a role in monitoring the delivery of the enhancements programme, but no longer establishes efficient costs in advance.

Network Rail's business plan sets out its proposals for maintenance and renewals, which the ORR then examines in coming to its Draft Determination. In examining the investment programme, the ORR conducts both top-down analysis and bottom-up analysis.[40] An example of the top-down analysis relates to the ORR's approach to digital signalling schemes, where the ORR conducted statistical analysis of trends in Network Rail's unit rates for infrastructure renewals and concluded that the unit rates were not sufficiently mature and were too high.[41] An example of the bottom-up analysis relates to the ORR's targeted assurance reviews of Network Rail's specific activities, with one such review covering Network Rail's approach to maintenance planning and delivery and the scope for improvements in this area.[42]

As well as conducting its own targeted assurance reviews, the ORR relies on independent experts as set out in chapter 7 on assurance. In 2022, for example, the ORR conducted a review of Network Rail's contract management arrangements, to inform the ORR's PR23 and ongoing monitoring of Network Rail's performance.[43]

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[40] Office of Rail and Road (2023), '*PR23 draft determination: supporting document – sustainable and efficient costs*', 15 June 2023, pp.17-18.
[41] Office of Rail and Road (2023), '*PR23 draft determination: supporting document – sustainable and efficient costs*', 15 June 2023, p.30 and Annex G.
[42] Office of Rail and Road (2022), '*Network Rail's approach to maintenance: targeted assurance review*', August.
[43] GHD and Gleeds (2022), *'Independent Report #28127 Part A – Review of Network Rail's contract management*', report prepared for the Office of Rail and Road and Network Rail, July 2022.

These previous two examples demonstrate that the ORR also examines areas that relate to the overall investment programme.

Following the Final Determination, Network Rail produces a delivery plan, which sets out how it will deliver the Final Determination set by the ORR. One of the purposes of the delivery plan is to provide a transparent baseline against which Network Rail will report its progress and which the ORR will use monitor delivery and hold Network Rail to account.[44] The delivery plan contains Network Rail's forecast of expenditure and the key outcomes, outputs and targets that Network Rail will meet.[45] Each year, Network Rail will update its delivery plan with any changes made transparently.

The delivery plan is one important mechanism that the ORR has available to deal with changes to the regulatory settlement during the regulatory period.

OFFICE OF GAS AND ELECTRICITY MARKETS (OFGEM)

As part of their RIIO-3 methodology[46], Ofgem have set out the four key outcomes for the industry for the next regulatory period:

- infrastructure fit for a low-cost transition to net zero;
- secure and resilient supplies – the network should also be efficient, data rich and adaptable;
- high quality of service from regulated firms; and
- system efficiency and long-term value for money.

Network companies use a common reference scenario to develop the investment plan that will deliver these outcomes. Ofgem proposes that all companies use the Energy System Operator's Future Energy Scenario (FES) 2023 "Leading the way" for their draft business plans which represents the fastest credible decarbonisation pathway and assumes customer behaviour and lifestyle will change considerably with electrification and some hydrogen decarbonising heating. in their final business plans using FES 2024 which will be published after the draft business plans.

Ofgem is proposing to continue with their RIIO-2 approach (with some modifications) of using price control deliverables (PCDs) to drive the delivery of the above outcomes and ensure customers receive the outputs they have paid for. The regulator proposes to set two types of PCDs: evaluative and mechanistic. The former is used when the actual work delivered can vary from what the company has submitted in its business plan in terms of cost, timings and outputs. Mechanistic PCDs are used for typically repeatable activities which can be defined by volume or number of units delivered, and allowances can be set based on unit costs. For each PCD, Ofgem specifies the outputs to be delivered, the date they should be delivered by, and the allowed for expenditure. Some of the proposed approach modifications for RIIO-3 include:

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[44] Office of Rail and Road (2023), '*CP7 Delivery Plan notice*', October 2023.

[45] See Network Rail (2024), '*Our delivery plan for control period 7: 1 April 2024 to 31 March 2029*', p.22. See also Network Rail (2024), '*CP7 Delivery Plan: Consolidated CP7 Outcomes forecast and targets: 2024-2029*'.

[46] Ofgem (2023), '*RIIO-3 Sector Specific Methodology Consultation – Overview Document*', 13 December 2023.

- asking companies to identify the consequences of any delay or failure to deliver PCDs including impact on customers and transition to net zero; and
- making PCDs more flexible by setting their outputs with a greater focus on outcomes.

Other incentives which Ofgem uses are “truth telling incentives” (i.e. high-quality, comprehensive and ambitious business plan data submissions) and efficiency incentives. In relation to truth telling incentives Ofgem proposes to build upon its RIIO-2 approach for RIIO-3. This includes setting rewards and penalties for the completeness and ambition (in terms of costs and outputs) of the business plan, with a lesser focus on quality where the assessment could be more subjective. Ofgem also proposes to strengthen, simplify and clarify the business plan guidance further. This incentive also encourages good justification of the proposed costs in the business plan.

Ofgem builds flexibility into the companies’ investment programmes through Uncertainty Mechanisms (UMs). Ofgem recognises that companies cannot accurately predict all future events such as changes in legislation, demand for work required or future costs. By using UMs, the revenue allowances can change in line with changes in requirements outside of company control. Ofgem proposes to continue using its range of UMs in RIIO-3 with modifications of specific UMs. The range incudes UMs for cases when:

- the investment need or scope of project is uncertain;
- the quantity of future demand or costs is uncertain; or
- the investment need has been identified but the exact scope of the solution is unknown.

Appendix 8 – Customer involvement

This appendix provides case studies of what other economic regulators require from regulated companies in terms of customer involvement.[47] The boxes below cover practices used by:

- Ofwat in their Price Reviews in 2014, 2019 and 2024;
- Ofgem in their RIIO2 price review for electricity distribution companies;
- ORR in their Periodic Review 2023 for Network Rail; and
- The CAA in their Heathrow Airport H7 price control.

Box 1: Ofwat's approach to customer involvement in PR14, PR19 and PR24

Ofwat's approach to customer involvement in PR14 and PR19

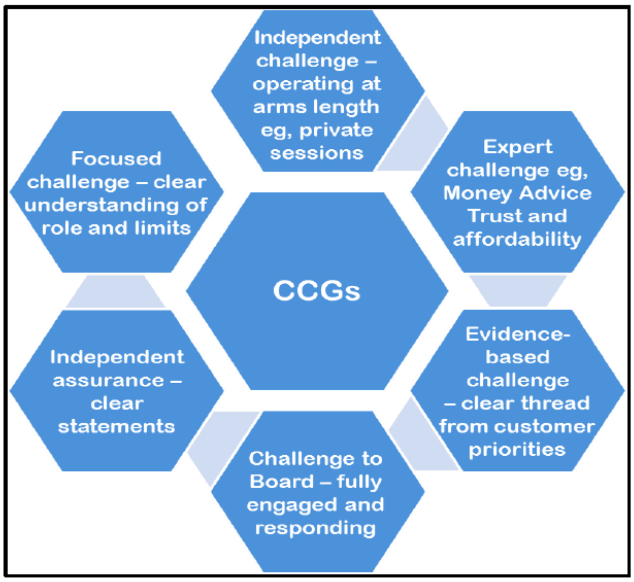
In Ofwat's price review in 2014 (PR14), Ofwat required companies to set up independent Customer Challenge Groups (CCG). The remit of the CCG was to:[48]

- test that the company has adequately understood and addressed its customers' priorities and needs;
- challenge whether the business plan delivers the right outcomes and levels of service at a price that customers are willing pay; and
- provide assurance to Ofwat on how well the company has engaged with its customers and highlighting any concerns.

The purpose of the CCG was to challenge the company's approach and response to customer engagement. It also provided Ofwat with assurance that the company business plan reflected a good understanding and reasonable balance of customer views. It was not intended to substitute for engagement with customers or negotiate on the business plan on behalf of customers. Therefore, the CCG did not have a remit to agree the company's business plan or price limits on behalf of the generality of customers. Ofwat did not prescribe how companies were to set up or run the group, allowing companies to decide the membership, timings and work programme. Ofwat's only requirement was for the group's chair to be independent of the company.

In Ofwat's lessons learned from PR14, Ofwat set out areas of good practice from the CCG reports in the following diagram.[49]

[47] See also UK Regulators Network (2017), '*Consumer engagement in regulatory decisions*', April 2017.
[48] Ofwat (2012), '*Information notice: Involving customers in price setting – Ofwat's customer engagement policy: further information*', 20 April 2012.
[49] Ofwat (2018), '*Aide Memoire for Customer Challenge Groups*', 21 March 2018, p.6.



One area of feedback from the CCGs was that some members of the CCGs identified the need for clearer and more accessible guidelines from Ofwat, to help focus efforts of the members.[50]

For PR19, Ofwat set out a very clear role for CCGs to provide independent challenge to companies and independent assurance to Ofwat on:[51]

- the quality of a company's customer engagement; and
- the extent to which the results of the engagement are driving the company's business plan.

Ofwat also set out that it was not the role of CCGs:

- To endorse the company's overall plan.
- To provide assurance that all costs included in the company's plan are efficient.
- To act as a substitute for a company engaging its actual customers.
- To substitute its views for those of customers.

Ofwat also specified that CCG chairs should not represent a particular organisation or group of customers and each CCG must include a representative from the Consumer Council for Water (CCWater).

In reviewing CCG reports, Ofwat focused on two main factors:

- the evidence provided in the CCG report demonstrating how the CCG has carried out its role; and
- the strength and transparency of the governance arrangements in place.

[50] Ofwat (2015), '*Reflections on the price review – learning from PR14*', 30 July 2015, p.21.
[51] Ofwat (2018), '*Aide Memoire for Customer Challenge Groups*', 21 March 2018.

On this latter point, Ofwat set out that it would take more assurance from CCG reports of CCGs with stronger and more transparent governance processes in place and that the ability to demonstrate independence will play a role in the confidence Ofwat places on the CCG report.

Ofwat's approach to customer involvement in PR24

For PR24, Ofwat identified areas that could benefit from collaborative research involving Ofwat, CCWater and companies, including:

- Research on common performance commitments;
- Incentives; and
- Acceptability and affordability testing.[52]

Ofwat also introduced open challenge sessions ('Your water, your say'), which involved each company inviting customers and other stakeholders to challenge their plans in an open forum. Ofwat required companies to hold two sessions:

- one session to be conducted during the development of the business plan, to allow companies the chance to revise plans to reflect views heard; and
- one session after final business plans, to allow companies to take account of views expressed.

Ofwat set out expectations on companies for these sessions, including that they would be independently chaired, that companies would prepare and publish a written record of the discussion and would need to demonstrate how it has reflected the views in their PR24 submission or directly to an attendee and that the participants are representative of a broad mix of the customer base.[53]

In its customer engagement policy for PR24,[54] Ofwat also set out expectations for what it considers high-quality research and the expectations for assurance of the quality and the use of customer engagement in business plans. Ofwat requires the assurance to be undertaken by independent expert(s) with no restrictions on reporting, which means:

- companies should not input to, or review, the assurance before it is issued, other than to check for factual accuracy; and
- assurance should contain clear statements and evidence that the process was conducted independently of the company.

Some companies have continued to use the CCG model to provide such assurance in PR24.

[52] Ofwat (2021), '*PR24 and beyond position paper: Collaborative customer research for PR24*', 27 October 2021.
[53] Ofwat (2022), '*Creating tomorrow, together: Our final methodology for PR24. Appendix 6 – Your water, your say*', 13 December 2022.
[54] Ofwat (2022), '*PR24 and beyond: Customer engagement policy – a position paper*', 24 February 2022.

Box 2: Ofgem's approach to customer involvement in RIIO-ED2

Ofgem's approach to customer involvement in RIIO-ED2

Ofgem regulates companies operating in the electricity distribution, transmission, and gas distribution networks through network price controls named RIIO, which stands for Revenue = Incentives + Innovation + Outputs. The most recent RIIO price control, RIIO-ED2, applies to the electricity distribution companies from 1 April 2023 until 31 March 2028. As part of their methodology, Ofgem required each company to establish an independently chaired Customer Engagement Group (CEG). The CEGs were required to provide a public report to the regulator with their views on their company's business plan, reflecting the perspective of local stakeholders.[55] The composition of each CEG was determined by the independent chair, rather than by Ofgem.[56]

Furthermore, Ofgem had established the RIIO-2 Challenge Group in 2018 which was also independently chaired and had the task to provide Ofgem with a public report on each of the companies' draft business plans, on behalf of existing and future customers (the end users).[57] The reports from the CEGs and the Challenge Group were considered by stakeholders during Ofgem's consultations and open public hearings on the business plans ahead of the Draft and Final Determinations.

The regulator's business plan guidance[58] also requires companies to evidence the following:

- the process for appointing CEGs;
- the company's effective engagement with the CEGs and Ofgem's Challenge Group;
- the company's robust and high-quality engagement with stakeholders while designing the plan; and
- the company's approach to ongoing stakeholder engagement.

Ofgem has issued specific guidance[59] on its enhanced engagement approach where it outlines the role of CEGs in the process, what areas the CEGs should focus on, what is within and outside their scope, and their governance arrangements.

[55] Ofgem (2020), '*RIIO-ED2 Methodology Decision: Overview*', 17 December 2020.
[56] Ofgem (2019), '*RIIO-ED2 Framework Decision*', 17 December 2019 updated 23 January 2020.
[57] RIIO-2 Challenge Group (2020), '*RIIO-2 Challenge Group Independent Report For Ofgem On RIIO-2 Business Plans*', 24 January 2020.
[58] Ofgem (2021), '*RIIO-ED2 Business Plan Guidance*', 30 September 2021.
[59] Ofgem (2021), '*Enhanced Stakeholder Engagement Guidance for RIIO-ED2 - Version 2*', 30 April 2021.

Box 3: ORR's approach to customer involvement in PR23

ORR’s approach to customer involvement in PR23

The Office of Rail and Road regulates the funding and monitors the performance of Network Rail in England, Wales and Scotland. ORR’s latest Periodic Review for Network Rail is PR23 which applies for Control Period 7 (CP7) running from 1 April 2024 until 31 March 2029. The PR23 Final Determination is based on the regulated company’s Strategic Business Plan (SBP) which is the main source of evidence used for determining the funding and outputs for CP7. ORR provides only very high-level guidance on how Network Rail should engage with its stakeholders and how it should evidence that in its business plan.[60] At a minimum, the SBP should demonstrate how:

- Network Rail has undertaken analysis to map their stakeholders;
- Network Rail has considered stakeholders’ views, including the governance process for reflecting their needs in Network Rail’s decision-making;
- Network Rail has discussed with stakeholders how to prioritise needs and the resulting trade-offs;
- Network Rail has ensured their engagement process is accessible to and inclusive of all stakeholders; and
- Network Rail has provided feedback to its stakeholders regarding the outcome of the engagement and how their views have contributed to Network Rail’s decision-making.

Box 4: CAA's approach to customer involvement in H7 price control review

CAA's approach to customer involvement in H7 price control review

The Civil Aviation Authority (CAA) is the economic regulator of airports and licenses those airports which have substantial market power. Heathrow Airport received its licence in 2014 (together with Gatwick airport) and has been subject to price controls since then. Heathrow’s current price control period, H7, started on 1 January 2022 and will last until 31 December 2026.[61]

CAA’s business plan guidance for H7[62] outlined high-level expectations for customer engagement which required Heathrow to:

- use an appropriate range of data and techniques;
- understand the needs and requirements of different consumers;
- engage consumers on complex issues by informing and educating;

[60] Office of Rail and Road (2022), ‘*Periodic review 2023: Guidance to Network Rail on the preparation of its Strategic Business Plan*’, 28 July 2022.
[61] Civil Aviation Authority (2023), ‘*Economic regulation of Heathrow Airport: H7 Final Decision – Summary*’, 8 March 2023.
[62] Civil Aviation Authority (2017), ‘*Guidance for Heathrow Airport Limited in preparing its business plans for the H7 price control*’, 27 April 2017.

- carefully design its willingness-to-pay studies to increase their robustness; and
- engage with consumers on an ongoing basis.

Similar to Ofwat's Customer Challenge groups (CCGs) and Ofgem's Customer Engagement Groups (CEGs), the CAA established the independent Consumer Challenge Board (CCB) in partnership with Heathrow airport for the duration of the H7 control period.[63] The CCB's role is to review and challenge the airport on the conduct of its customer engagement programme and on how the airport has interpreted and applied the programme's results in its business plan. In particular, the business plan guidance required CCB to report to CAA on whether:

- CCB was able to fulfil its role objectively, independently, and with full access to required information and resources from Heathrow airport;
- Heathrow airport implemented a robust customer engagement programme including effective communication to customers and accessibility to all customers;
- Heathrow airport genuinely incorporated the customer engagement programme results in its business plan;
- Heathrow airport translated consumers' expectations into outcomes, and how well it has evidenced that; and
- the outcome delivery incentives and targets are sufficiently challenging and aligned with consumers' interests.

[63] Civil Aviation Authority (2016), '*Decision on the Terms of Reference for the H7 Consumer Challenge Board (CCB)*', 20 September 2016.

Appendix 9 – Other technical assumptions

This appendix sets out how we will estimate these assumptions, which we will revisit throughout the Strategic Review of Charges (SRC) process to ensure that the financial forecasts are as accurate as possible.

BACKGROUND

For forecasting purposes, we require a set of assumptions in order to evaluate different scenarios and to assess the charge caps necessary for Scottish Water to deliver the Ministerial Objectives. Some of these assumptions are covered below, along with an initial view of how we might assess the appropriate value (or range of values) for them.

REVENUE

The majority of Scottish Water's funding comes from household and non-household customer charges (see section 10.2). The revenue from these streams will depend on a number of factors including growth and discounts available to customers. These assumptions are covered below.

Price inflation

Real price effects will impact the buying power of the funds Scottish Water collects, particularly when looking over the longer term. As set out in chapter 11 we propose setting charges relative to inflation. In practice, as in previous regulatory periods, this will mean that customer charges are set relative to the Consumer Price Index (CPI) measure of inflation for October of the previous year. We use the previous October due to timing as it is the most recent at the time Scottish Water prepares its charges scheme submission for our approval, which typically happens in the December before the new charges take effect on 1 April of each year.

When CPI figures for the previous year are confirmed, they are published online by the Office for National Statistics (ONS). As for projections we will consider the forecasts of authoritative sources, typically this will be the Bank of England who publish Monetary Policy Reports quarterly.

This index will be applied when forecasting the following profiles:

- Household revenue
- Non-household revenue
- Other revenue
- Infrastructure Charges Income (ICI)

Household property growth

When forecasting household revenue, we must consider the growth in household properties we expect to see over the period. However, since customers of Scottish Water are charged based on the council tax band of their property, we estimate the growth in unmeasured households based on

‘Band-D equivalents’ (where households in other council tax bands are converted into Band D equivalents based on their charge as a ratio of the Band D charge).[64]

To estimate this growth rate, we will examine historical timeseries, whilst also taking account of any relevant forecasts from reliable sources at the time.

Council tax bands and discounts

In Scotland, a large proportion of household customers receive a discount on their water and wastewater charges through the Water Charges Reduction Scheme (WCRS). While neither WICS nor Scottish Water have control over the value of this discount or who is eligible for it, we must understand the impact that any changes to the WRCS might have on Scottish Water’s revenue in the event that Ministers decide to change the level of discount or eligibility for a discount through their Principles of Charging for the industry.

Non-household property growth

For the growth rate for the number of non-household properties, we will take a similar approach to that of household growth – using a combination of historical data and reliable external forecasts where appropriate.

As the majority of non-households are metered, their consumption will affect Scottish Water’s revenue. We receive information on the volumes of water being used through the P tables of the annual return. We will use this to review historic trends in consumption (while recognising that consumption is likely to have changed – perhaps only temporarily – as a result of the Covid-19 pandemic).

OPERATING COSTS

Scottish Water’s operating costs remain relatively stable year on year. When forecasting operating costs, we will consider:

- the appropriate efficiency challenge to ensure that customers are not paying more than is necessary
- the inflation assumption based on published inflation index or indices for rolling forward operating costs; and
- the appropriateness of any other adjustments where required.

Operating cost inflation

As the costs of goods and services will increase through the regulatory period, potentially significantly, we will assume that Scottish Water’s operating costs will increase in line with inflation

[64] For example, the Band H charge is 2 times the band D charge. As such, a household in a council tax Band H property is equivalent to 2 households in a council tax Band D property.

(before any assessment of efficiency or any other potential adjustments are applied). We expect these to be based on the published consumer price index inflation (CPI) for operating expenditure based on the average level of CPI over the financial year. We will consider the projections for CPI as per the Bank of England's latest forecast in its Monetary Policy Report.

PFI EXPENDITURE

Scottish Water currently has seven active Private Finance Initiative (PFI) contracts. The majority of these were formed around the turn of the century when Scottish Water was formed. We plan to model these costs in a more granular manner than we have in previous regulatory periods.

PFI inflation

PFIs in Scotland typically have contracted costs tied to an inflation index, though the specific index can vary between contracts. Most often these contracts are linked to the Retail Price Index (RPI) measure of inflation. We expect a published measure of inflation that most closely follows the inflation set out in the relevant contracts for PFI expenditure. If Scottish Water proposes to use RPI, we will consider the projections of other authoritative sources such as the Office for Budget Responsibility (OBR) as an alternative, recognising that the Bank of England does not produce forecasts for RPI.

Expiry of PFI contracts

Two of these PFI contracts are due to expire at the beginning of the SRC27 regulatory period. And the current assumption is that the works will return to Scottish Water ownership/management at that point in time. We collect this information along with the cost of each contract in the annual return and regulatory accounts we collect from Scottish Water each year.

Due to economies of scale and operational advancements over the last 20 years, Scottish Water may be able to operate these assets more efficiently than the costs of the current contracts. However, these assets may require additional maintenance on return to Scottish Water. We will work with Scottish Water to understand the potential impact on costs from these assets returning to Scottish Water.

INTEREST PAYMENTS

As discussed in section 10.2, Scottish Water takes on additional debt each year to fund a proportion of its investment. Scottish Water holds debt of approximately £4.5bn[65], meaning that interest payments are of a material cost and need to be carefully considered when modelling. The main factors here will be the level of new borrowing available to Scottish Water, interest rates, and the maturity of existing loans.

[65] £4.5bn of debt was held at financial year end 2022-23.

New borrowing

Scottish Water borrows from the Scottish Consolidated Fund (SCF). The amount of borrowing is set by the Scottish Government in its Principles of Charging. The Commissioning letter for SRC27 indicates that, for planning purposes, we should assume that similar levels of borrowing available over SRC21 (£1.03bn over the 6 year period) will be made available in SRC27.

We will use a number of authoritative sources to assess an appropriate assumption for the interest rate to be applied to this borrowing.

Existing debt

As part of the annual return and regulatory accounts, we collect information on existing debt Scottish Water holds. We collect this data at a granular level, with data being collected on each individual loan. This data includes:

- Drawdown date
- Maturity date
- Principal
- Interest rate

We will use this data to model interest payments into the future. The maturity date, principal and interest rate can be used to calculate the amount of interest due on each existing loan in any given year. It will be assumed that on the maturity of a loan, the principal will be reborrowed at the same interest rate as any other new borrowing in the year.

TAXATION

Corporation tax payable is a function of UK Government policy and Scottish Water's pre-tax profits/losses, investment allocations to depreciation pools, depreciation rates, corporation tax rates, and brought forward losses from previous financial years. We will continue to work with Scottish Water to understand the materiality of any potential tax liability Scottish Water might face in the future.

CAPITAL EXPENDITURE

Chapter 14 sets out in detail our approach to capital expenditure for SRC27. There are however additional assumptions to consider. These are covered below.

Capital inflation

We expect Scottish Water to use a published measure of capital price inflation for investment that Scottish Water considers closely follows the capital price inflation that it observes. We consider that there is scope for Scottish Water to examine the merits of indexing capital projects to the new infrastructure construction output prices index (COPI), which Ofwat is now proposing to adopt for the water and wastewater companies in England and Wales. The ONS publishes outturn data for

COPI, and we can see that, typically, COPI runs higher that CPI. We will use this publicly available data from the ONS as well as any relevant forecasts available at the time to assess an appropriate assumption for capital price inflation going forward.

CASH BALANCE

At any point in time, Scottish Water will hold a cash balance as a means to mitigate short term shocks, but as mentioned above, the cash balance will also reflect timing differences between revenues and expenditure. We will work with Scottish Water to assess the appropriate level of cash it should hold, recognising that it could need access to cash reserves in the event of an unexpected cost shock.

Scottish Water can earn interest on its cash balance. Our assumption for the interest rate applied to cash balances will be considered using an approach in line with the approach for other assumptions – using a combination of reviewing historic trends observed through the data we receive from Scottish Water, and analysis of any other authoritative sources available to us at the time.

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