



The voice for water consumers
Llais defnyddwyr dŵr



Water industry reform and water company ownership models review

High-level summary



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FINAL REPORT

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Contents

Contents.....	2
Glossary.....	3
Summary.....	5
1. Introduction.....	9
2. Approach.....	14
2.1 Literature Review.....	14
2.2 “Outside in” Interviews	18
3. Findings.....	19
3.1 Ownership Models.....	20
3.2 Gaps and issues in the current water sector	29
4. Reform Options.....	31
5. Conclusions	45
6. Recommendations.....	48
Appendix A	53

Glossary

AMP	Asset management plan (period of 5 years)
BOO	Build-own-operate
CCW	Consumer Council for Water
CEO	Chief Executive Officer
DCWW	Dŵr Cymru Welsh Water
DPC	Direct Procurement for Customers
DWMP	Drainage and Wastewater Management Plan
EIP	Environmental Improvement Plan
ESG	Environmental, Social, Governance
FCA	Financial conduct authority
GCSA	Government chief scientific advisor
HoL	House of Lords
ICG	Independent Challenge Group
KPI	Key performance indicator
M&A	Mergers and acquisitions
MBO	Management buyout option
MoD	Ministry of Defence
NAV	New appointments and variations
NED	Non-executive director

PCC	Per capita consumption
PFI	Private finance initiative
PPP	Purchasing power parity
PR24	Price Review 2024
RCV	Regulatory capital value
SIPR	Specified Infrastructure Projects Regulations
SOCS	Sewerage Only Companies
SWOT	Strength weaknesses opportunities and threats
UKSV	United Kingdom Security Vetting
UREGNI	Utility Regulator Northern Ireland
WOCS	Water Only Companies
WRMP	Water Resource Management Plan

Summary

Summary of requirement & background

This project was undertaken by WRc to review the existing water and wastewater industry and service models and explore new ones for the water industry in England and Wales, looking at water companies in terms of their ownership, financing, and governance structures. This summary report is one of three outputs from the project and provides a short summary of the Technical Report (WRc, 2023). The project aimed to identify options for the successful operation of water and wastewater services that address various challenges of public concern. This could be through improved or enhanced water industry and water company models that CCW could use to inform future conversations on what would deliver great service and value for consumers in England and Wales, now and in the future.

Any consideration for reform and areas of needed improvement and better service considered the following key themes:

- Affordability and fairness of bills.
- Service resilience (particularly in the face of long-term climate change challenges).
- Environmental protection to acceptable standards for the public and regulators.
- Transparency and accessibility of water industry financial performance, executive and shareholder remuneration, and profits in the context of service delivery and how financial gain priorities might hinder affordable service and environmental resilience.

The project gathered evidence from two key sources:

1. An extensive literature review of 185 papers, reports, websites, and journals from the UK and internationally. Literature that was identified as relevant and useful for the project purpose was highlighted through a 1 to 5 ranking system (1 greatest relevance with empirical evidence and 5 with weak or anecdotal evidence or pure opinion).
2. A series of semi-structured interviews from a range of experiences to provide an “outside in” perspective. Interviewees were not currently employed in government, the England and Wales water sector regulators, or utility companies. The interviews provided:
 - A broad range of views to ensure the engagement was apolitical and covered key areas including the environment, customers, finance, and service

provision/delivery from a range of sectors including retail, energy, finance, environment, and customer-focused organisations.

- Cross-sector views and perspectives from the UK and internationally.
- Discussion with senior people with a combination of water sector and non-water sector experience, including experience with different models and approaches, and who understand the transition to a new model and the ease or difficulty that may be experienced through such a change.

Conclusions

We conclude that an overhaul and substantial change to the industry and company ownership would not address the main problems experienced within the water sector in the short time-frame required.

There is a lack of compelling evidence in the literature or from our discussions with interviewees to suggest that any one particular model is 'best', or that ownership type is the key factor in the delivery of great water and wastewater services for customers and the environment. How effectively the models work depends on governance, cultural, regulatory, financial, and customer factors. We think that focus needs to be given to why some models work better than others in some contexts, whether these conditions can be created in the water and wastewater sector, and whether ownership change is needed in addition to creating appropriate conditions to deliver more effectively.

Hence, we see merit in taking a more measured approach. We think an adaptive pathways approach would help the sector move towards reforms that would deliver great service for customers and the environment. Delivering 'no regrets' reforms relating to governance, culture and incentives in the short term that address the issues the sector faces is likely to be beneficial. The sector can then evaluate whether longer term reforms to service models are necessary.

Recommendations

It is evident that the sector faces some challenges today, and in the longer term. It is clear that some form of change is needed, however few of the interviewees supported the need for radical change to the ownership structure or model as being the way to deal with the gaps and challenges.

Through the literature review and interviews, we developed a list of nine potential reform options that could improve service, affordability, performance, and transparency:

1. Make water company performance data available through a 'balanced scorecard' that provides the public with key information that is easy to access and understand, and in a

single location. This study suggested that the scorecard could include financial and performance data, comparison between companies, UK in the global context (e.g. world leading on water quality compliance) and some historical trends and context. This might also seek to address the more emotive aspects, for example providing a simple breakdown of how customer money is spent, and putting CEO pay into a wider context for the public.

2. Improve public representation in decision making through giving non-executive directors a greater role, setting up citizen juries, facilitating ongoing engagement sessions or open challenge sessions, and giving the public a say in how or where poor performance fines are spent.
3. Provide greater focus on regulating companies on what they said they'd deliver in their business plans, and not just the high-level outcomes, to reduce the risk of underinvestment being portrayed as efficiency.
4. Development of consumer duty regulations for the Environment Agency, Natural Resources Wales, and Drinking Water Inspectorate, which aligns the regulatory and company duties to consider how their work impacts the public from all perspectives – as a citizen, consumer, nature user, etc. Consumer duty regulations are currently being implemented in the financial sector to set higher standards of care and clearer standards of consumer protection, along with greater consistency across the sector.
5. Clearer strategic direction for the water sector through a specific Chief Advisor who provides leadership and develops ethical and evidence-led policies, setting long-term outcomes at a national level.
6. Further integrated, long-term planning is required. Although considerable time and effort goes into long-term planning in the water sector (e.g. Water Resource Management Plans and Drainage and Wastewater Management Plans), a more cross-sectoral perspective could be beneficial.
7. Vetting of shareholders and equivalent company members. This is important as shareholders/members provide direction, scrutiny, and funds, influencing boards and the direction of travel for individual companies. This aims to improve the management and mitigation of risk associated with ownership/shareholders.
8. An increased focus by current companies on social value, which means what value companies are adding to society, communities, and nature. This could be measured by human capital, natural capital accounting, product liability, stakeholder opposition, and social opportunities (e.g., finance and equitable access to services, donations, skill sharing, and volunteering).

9. New funding models have developed for big infrastructure projects, including Direct Procurement for Customers and the Specific Infrastructure Projects Regime. Further investigation into funding models for big infrastructure projects is recommended. Possible options vary in terms of who assumes ownership and when independent finance is introduced through the lifecycle of the asset(s).

1. Introduction

The current sector landscape, political environment and societal debate forms the backdrop for our consideration of potential sector reforms.

The cost of living, climate change and environmental challenges over the past year have refuelled a public and political debate about the suitability of the current privatised water industry model. Rising household costs, greater awareness of pollution from storm overflows, the extended drought with hosepipe bans, and outcry about leakage have fuelled the perception that the current industry model is not delivering for customers and nature. The recent evidence on Trust and Perceptions: People's Views on the Water Sector provides a strong indication that the current approach needs some fundamental change to address such stark concerns from society.¹ Without some form of reform, there is likely to be a re-emergence of the public versus private debate, which may not centre on more nuanced reforms that could address the issues and improve the existing model, and instead focus on public ownership and a model that wasn't working effectively back in the 1980s.

The water and wastewater industry and service models for England and Wales face considerable scrutiny, particularly in relation to environmental performance. Ofwat's Performance Commitments cover a range of outcomes that cover customer service, environmental outcomes, and asset health, whilst the Environment Agency reports annually on water companies' environmental performance, giving an overall rating out of four stars.² Despite such data being published, the issues around sewage pollution of rivers and beaches and storm overflows, has highlighted there are risk and issues that encompass the entire sector, including its overall governance.

Society has awoken to the fact that sewage can and does discharge to the environment, and the digital era enables information and awareness to travel at increased speed and with significant influence, with social media playing a pivotal role in changing awareness, beyond the traditional narratives that are shared by the mainstream media channels. Social media influencers and groups can share problems and issues to a large cohort of the community at lightning speed, with activists and citizen scientists revealing pollution events as they unfold. The argument that systems are in some cases designed to operate in this way, in the case of storm overflows, is not an acceptable explanation for the public.

¹ [Trust in Water, Ofwat](#)

² [Our final methodology for PR24, Ofwat 2022](#)

There is a concerning lack of the mature and honest public debate about what can realistically be achieved and over what timescale and at what cost, which is needed to enable a roadmap for the sector to address the public's concerns. In particular, a deep debate is needed about the practical issues, solutions, roles and responsibilities, options to make improvements and whether customers can afford the associated costs. All parties need to be heard in this debate and their perspectives considered so that the sector can move forward. The water and wastewater sector operates in a perennial balance between the needs of people in terms of public health and access to water as part of civilised society, the cost of delivery and management of the service provision, and the needs of the environment with the abstraction of water and return of it to nature.

There is an increasing push from government to set stretching, ambitious targets and to mandate these as legally binding.³ There is an inherent risk that this could drive the wrong behaviours or result in sole focus on the current water and wastewater ownership models because point sources are easier to observe, control and enforce. This won't necessarily automatically lead to the desired outcomes given that there are multiple sources of diffuse pollution contributing to the overall condition of water bodies in England and Wales, many of which are not under the remit of water companies. The water sector is rightly targeted on some key issues, but there is a real danger that billions of pounds of investment could be spent, and the environmental outcome may not materially improve as a result,⁴ if other pollution sources that are not related to the sector are not also tackled.

Customer participation in the solution to sewage pollution has also been downplayed in the media narrative – for example changing people's habits over what is put into the drains versus disposed of as domestic waste. A mature debate will need to cover how everyone contributes to an affordable solution to cleaning up the water environment and does not result in water and wastewater company ownership being blamed as a default position when the contributory actions of others is also a key factor.

The sector faces significant challenges that need to be addressed, today and in the future. There is growing pressure from population growth and climate change, and arguably changing expectations of what the sector must deliver. Trust in the sector is an acute problem.⁵ A recent survey undertaken by Ofwat indicates a steady decline in trust to deliver all outcomes in the water sector, particularly with respect to environmental performance and financial management. Only 65% of customers trust they will receive good quality water, just

³ [Environmental Improvement Plan 2023](#)

⁴ [Storm Overflow Evidence Project, Water UK November 2021](#)

⁵ [Trust and perceptions: People's views on the water sector, Ofwat February 2023](#)

over half (54%) believe they will be notified of problems in their area, and 35% trust companies will do no environmental harm.⁶ A similar survey by CCW found that trust in water companies was greater than in the water sector as a whole, with nearly half (46%) of people having positive associations with their water company, whilst half (50%) of respondents had a negative perception of the water industry.⁷ 62% of respondents stated that their perceptions of their water company had not changed over the past year, whilst 23% stated that their view of the sector had worsened. This is related to a combination of concerns ranging from the provision of safe drinking water, to acting in the interests of the environment, to investing properly into water networks. The public want water companies to be transparent and improve how they protect and enhance the environment, however public understanding of this complex topic is low.⁸ Whilst they know that river pollution is occurring, they don't fully understand it. By breaking down this knowledge gap, the sector will be more likely to gain credibility and trust.

Engagement with the water industry is generally low, with many public opinions influenced by negative media attention.⁸ This reputational damage to the industry is another factor that is potentially holding water companies back from having a mature debate on key issues, as the issues around trust can undermine the evidence basis for what might be in some instances necessary changes in investment or fundamental approach.

Transparency is an issue. Information is generally available somewhere but is often spread across several difficult to locate sources. This lack of accessibility does not help demonstrate the sector has nothing to hide. Attempts have been made at a sector performance dashboard, but none are currently providing a single, independent source of information that covers the full range of issues that society is concerned about. The sector doesn't habitually shout about what it's genuinely good at (providing safe drinking water for example). As such, trust and transparency could be improved, not through changing the industry and service model, but by providing all the relevant information from a trusted independent source in one place that would benefit the perception of the industry. This might for example include a simple breakdown of how customer bills are spent, including how much of this is profit or relating to senior management/CEO pay or bonuses to ensure there is greater focus on what the sector is delivering, and putting some of the emotive costs into a clearer and more balanced context. It is critical that a single source of data provided by an independent and trusted institution is available to portray a transparent view of the sector and the key areas that matter to the public.

⁶ [Trust and perceptions: People's views on the water sector, Ofwat, February 2023](#)

⁷ [Perceptions and Trust in Water Companies, CCW, May 2023](#)

⁸ [Bridging the gap: Awareness and Understanding of Water Issues, CCW, December 2022](#)

Table 1 below provides a SWOT analysis summarising the current sector model and issues identified through the literature review and from stakeholder interviews, providing a summary of issues and challenges raised:

Table 1 Water sector SWOT analysis (England & Wales)

Strengths	Weaknesses
<ul style="list-style-type: none"> • Good legislative and regulatory foundation (governance principles). • Financial stability – there have been few outright company failures and, in the instances where companies have become financially distressed, stable service has been maintained for customers and the companies' financial stability has been restored. • Good investment potential. • Good operational/Technical skills (not capacity). • Access to science/technology. • Access to world class supply chain. • The sector has attracted significant investment since privatisation resulting in: <ul style="list-style-type: none"> ○ Significant improvements in drinking water quality since privatisation. ○ Significant improvements in (fair-weather) wastewater treatment and fair-weather discharge compliance/ quality of fair weather treated effluent (albeit that this has stalled more recently and there is significantly more to do on wet weather performance). ○ Green energy generation from sludge which is helping reduce overall greenhouse gas emissions. ○ Improvements in drought resilience since privatisation (albeit with more to do, particularly around sustainability, low pressure during dry weather and resilience to extreme drought). • Overall, the service does support a first world economy and takes significant pressure off the NHS (as sanitation and clean drinking water is a major protection mechanism). Albeit that there are resilience challenges for the sector to support future economic growth and balance this with environmental burden. 	<ul style="list-style-type: none"> • Reducing customer confidence and levels of credibility between key parties (blame culture). • Current reputation of the companies means they do not have a credible voice. • Polarised debate is not helping the sector to move forward constructively. • Lack of leadership and coordination (not sufficiently coordinated and aligned). • Mismatch between investment needs and affordability. • Customers less likely to participate to help make the solutions more affordable given current confidence levels. • Lack of public understanding about essential and non-essential uses of water – lack of debate about whether all water should be affordable or only essential water. • Lack of evidence-based policy, weakly evidenced based policy or significant policy decisions taken without full consideration of the implications especially where this impacts significantly on customer bills. • Investment Planning is mainly perceived as being for regulatory purposes in most companies rather than being to benefit the company and their role in providing great service for customers and the environment. • Supply chain limitations and ability to raise sufficient finance • Aging workforce and conservative company culture can make it difficult in parts of the sector to bring in the diversity of skills needed to think creatively about the problems the sector faces. • The sector is relatively weak in its analytical capability and IT/ automation provision. This means that, while large amounts of data are collected, too much time is spent on low value

	<p>activities such as data cleansing at the expense of high value analysis that would generate insights into how to improve operations.</p> <ul style="list-style-type: none"> • Tendency to be skilled at or more focused on reactive and crisis management activities and less at proactive planned activities. • Increasing pressure on the environment from the sector's activities means there is a need to find a more sustainable long-term balance.
Opportunities	Threats
<ul style="list-style-type: none"> • Reconnect with the sense of social and environmental purpose that drives many people working in the sector – prove we can live up to delivering on this purpose. • Strengthen leadership and coordination. • Improve transparency/accountability to build trust. • Refresh investment planning. • Address key customer concerns (environmental, leakage etc.). • Address mismatch between investment and affordability. • Address deliverability concerns. • Improve insight, potentially coordinate better with other regulated infrastructure industries and encourage customer participation to reduce the cost of improving service. • Change the narrative, image of the sector and thus attract fresh and diverse problem solvers to the sector. 	<ul style="list-style-type: none"> • Sector continues to be defined by notable failures. • Declining reputation remains unchecked. • Dysfunctional aspects of planning and delivery result in further poor performance/failure. • Issues with leadership and direction result in further poor performance/failure. • Declining reputation and much publicised blaming of the sector makes it unattractive to people who could come in and make a difference. • Company culture may in some places actively discourage new and innovative thinking. • Regulatory risk limits access to timely investment. • The policy balance between aspiration and evidence results in further sector failure. • Inability to break down the challenges the sector faces into more manageable portions – threat that activity to address challenges will either be shut down/ deferred (because the problem is too big or too expensive to solve in short order) or of unrealistic expectations of major results from low/no cost solutions.

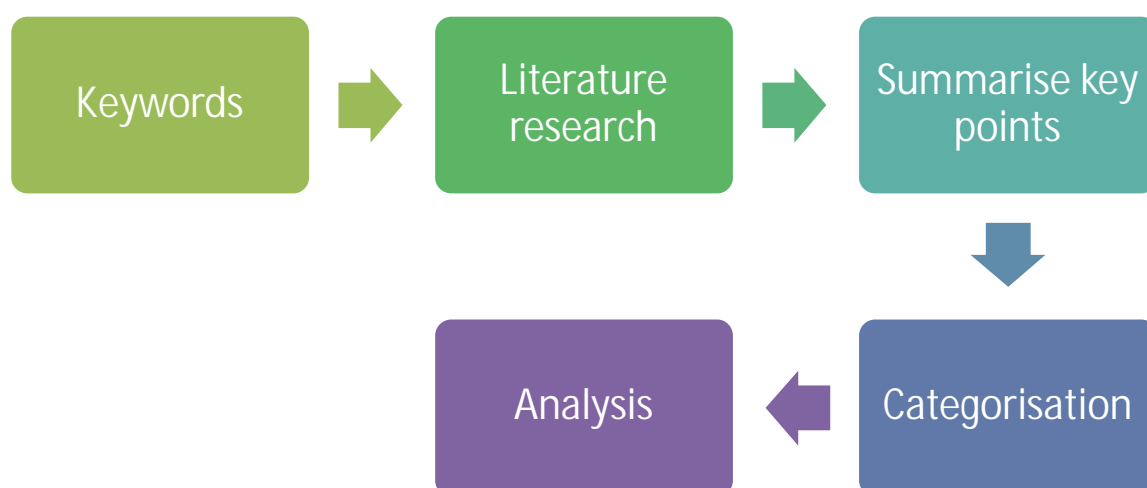
2. Approach

This section provides an overview of the approach in terms of gathering evidence through a literature review and via interviews that provided an “outside in” perspective.

2.1 Literature Review

The overall approach for the literature review is illustrated in the following diagram:

Figure 1 Literature review approach



Keywords

Table below provides a summary of topics and keywords that were used as a guide to undertake the literature review. Papers, reports, journals, and other sources were identified with a focus on recent publications, but not excluding any older material that was considered relevant.

Table 2 Summary of topics and keywords used as part of the literature review.

Topic	Keywords	Jurisdictions
Water industry in Scotland	Ownership, structure	Scotland
Water industry in Wales	Ownership, structure	Wales
Water industry in England	Ownership, structure	England
Financial performance and resilience of water utilities	Financial performance, financial resilience	England, Wales, Scotland
Performance (or operational performance) of water companies	Performance, outcomes, charges, tariffs, customer satisfaction	England, Wales, Scotland
Customer views and perception of utilities	Customer perceptions, customer trust, confidence, etc.	England, Wales, Scotland
Costs of renationalisation	Costs and benefits of renationalisation, costs of moving from private to public utilities/sectors	England, Wales, Scotland,
Opinion polls	Opinion polls, water industry UK	England, Wales, Scotland,
Utility models – international and cross-sector (rail, water, gas/energy etc.)	Public, private, public-private joint venture, delegated private (BOT, BOOT), delegated private concession	International
Quantitative analysis (costs, benefits, risks, opportunities) of different utility structures	Cost-benefit analysis, quantitative, SWOT, analysis of structures	International
Corporate governance	Utilities, public, private sector – use link to expand search into other territories. Corporate Governance – On Board: A guide for members of statutory boards – gov.scot (www.gov.scot)	International and UK
Register and download reports and ideally get data into Excel – UKCSI	UK Customer Satisfaction Index (UKCSI) - Institute of Customer Service	UK – focus on comparing water and other utilities
Privatisation level of water and other utilities	World Bank, Asian development bank	International

The topic of ownership and structures is, overall, a political topic, and there are understandably several sources that are likely to be politically influenced (political party reports, new articles). The literature was categorised into the following groups to enable the sources that were more likely to contain empirical evidence and be less biased to be reviewed as a sub-set:

- Political – papers and reports published by political parties, newspaper articles.
- Academic – studies, journals and associated papers published from an academic perspective.
- Government/regulatory – reports and papers published by the government or regulators.
- Utility company – any material published by water companies or by industry bodies.
- Third parties – any sources that did not align with the above, e.g., independent consultancy reports, independent companies.

Further categorisation was added in terms of the strength of the evidence against the following categories:

Figure 2 Evidence categorisation



The sources were broadly categorised as follows:

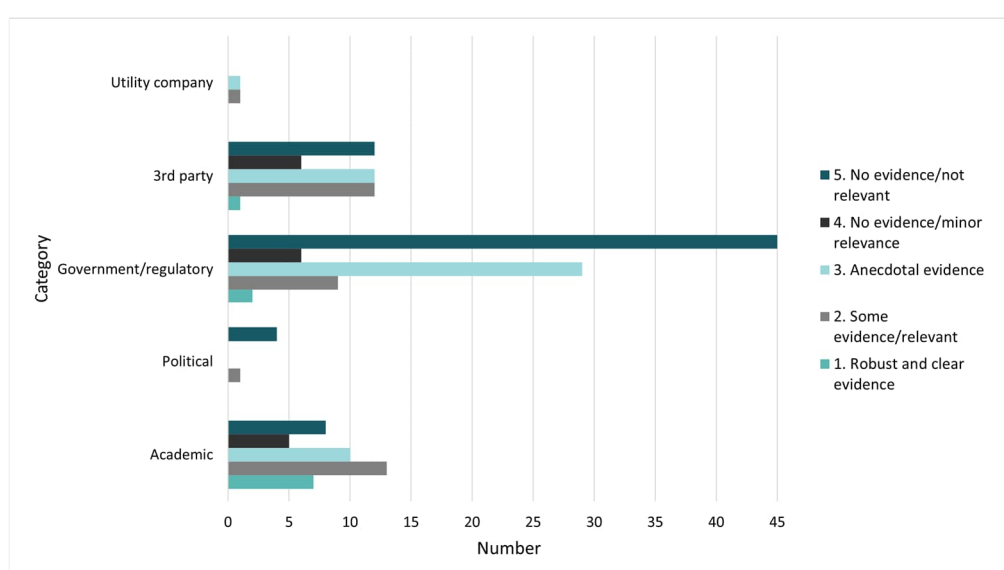
- Strong supporting evidence – clear, empirical evidence provided.
- Weak supporting evidence – some evidence to support arguments or approaches, but typically anecdotal in nature.
- Neutral – no conclusion either supporting or opposing a particular stance.
- Weak evidence against – some evidence to oppose a particular argument or approach, but typically anecdotal in nature.
- Strong evidence against – empirical evidence used to oppose a particular argument or approach.

The team also categorised the literature into the following groups:

1. Water and wastewater industry and service models.
2. Governance arrangements.
3. Utility models that serve the public.

Figure 3 below provides a summary of the literature review sources that were reviewed as part of the project.

Figure 3 Summary of literature review sources



2.2 “Outside in” Interviews

The project sought the views of a wide range of people involved in infrastructure sectors and with experience in the business models under consideration in the study, a significant proportion of whom had previously worked in the water sector or currently work in the water sector in another jurisdiction. The selection of the interviewees was not intended to act as a statistically representative sample of the population of England and Wales, but rather as a panel of people with appropriate expertise to comment on the pros and cons of different sector models. We considered whether to interview people currently employed within the sector in England or Wales. It was a concern that, while there are likely to be valuable insights and perspectives from within the sector, there would be a significant risk of conscious or unconscious bias and potentially “status quo bias”. Therefore, an “outside-in” approach was taken. The interviews aimed to obtain a broad cross-section of perspectives to support:

- Exploration of different potential water and wastewater service models and utility models that serve the public, including the pros and cons of each one and relevant experiences from other sectors.
- Identification of potential improvements to the current regulated privatised monopoly water and wastewater service model.
- Understanding of how the transition to the recommended water and wastewater industry and service models could take place, including the cost of risks associated with transitioning.

The questionnaire is provided in Appendix A for reference.

3. Findings

This section aims to provide a high-level summary of the key findings, and in this public facing summary does not seek to present detailed body of evidence that is covered in our full report. Looking to the future, we think the capacity for major structural reforms to deliver better outcomes are uncertain all else being equal.

In terms of potential wastewater industry and service models, we have reviewed multiple options for significant structural changes to ownership and governance. We think that none of these changes are either straightforward or guaranteed to work, and making such change would be both costly to implement and highly disruptive. Generally, we think that to enable structural reforms to work well other aspects of the SWOT analysis presented above need to be addressed. For example, a company with a non-inclusive culture is less likely to find better means of delivery or to listen and serve its entire customer base well regardless of its ownership structure or the wider governance model.

The literature review and interviews indicate that there is no strong correlation between ownership (public versus private models) and performance, levels of service and investment. The literature review provided several examples of both public and private ownership performing better than the other. For example, whilst Scottish Water has performed well and been able to access capital to finance investment, the public sector water company, Northern Ireland Water has had difficulty financing investments through the public purse since its formation. Many individual articles, papers or examples can be found to support either public or private ownership in terms of whether they provide better value or service, however where papers that are considered generally more impartial and where empirical analysis was undertaken, tended to conclude that there is no clear evidence that supports that either a public or private as being better than the other. We did, however identify that the public models tend to have less acute “trust” issues, mainly due to there being no distribution of dividends to a private shareholder and less concern over issues such as executive pay.

Further evidence exists closer to home that supports this view, with Ofwat’s published annual financial resilience and water company performance data. This demonstrates there is a wide range of performance both in terms of regulatory Performance Commitments and as a surrogate for general performance, company Return on Regulatory Equity (RORE) where some companies are outperforming and some underperforming. There are further dimensions with customer metrics such as CMEX along with the financial resilience data that overall provides a perspective that within English water companies alone there is a vast spread of performance with some companies performing well in terms of customers, general performance measures and financial resilience. The composition of evidence from published data, literature sources and from interviewing stakeholders overall does not support the view that the current model is broken and that a fundamental root and branch reform would be the solution to current areas of concern for the public.

Changes to current ownership models (particularly private) need to be evaluated through the lens of whether they would or could deliver significant benefits with respect to the environment and great customer service. The remainder of this report sets out options for ownership models and governance arrangements and an evaluation of these options. We should also consider whether a change would address the root cause of general public dissatisfaction with the sector. We consider each model in turn and set out further conclusions at the end of this section.

Governance, ownership, or both?

Our conclusion from this work is that whatever the water and wastewater industry and service model, the significant public interest in water and wastewater industry governance justified carrying out a substantial review and exploring the potential changes to it. We do not think it is possible to consider water and wastewater ownership models and governance arrangements in isolation and have therefore included both ownership and governance options in our options appraisal.

3.1 Ownership Models

Private Ownership

Private ownership is the default model in England. There are currently three companies that have listed equity, and the remaining companies (comprising most of the industry) are owned by private equity. The private owners range from single owners to consortia of owners, and mainly include infrastructure funds, pension funds and utility companies from other jurisdictions. All companies have a significant amount of debt finance, with the privately owned companies generally having a higher ratio of debt to equity than the publicly listed companies.

Our conclusions from the literature on private ownership and discussions with interviewees are that, in the context of higher interest rates on debt and increasing investment needs for the sector, the adoption of higher gearing and securitised structures in the past may cause difficulties if appetite from new equity to invest were to reduce (e.g., due to competition with other infrastructure investments). There were mixed views among the interviewees about whether reducing gearing in the existing company structures is needed, given that the rating agencies largely accept that current structures can attract investment grade credit, versus introducing a different mix of equity and debt to finance growth.

On balance, we think it is likely to be necessary to reduce gearing to support investment to address the significant future challenges the sector faces. We also think it is likely to be difficult because, while it is not fair that customers pay, it may also not be fair that investors that were not responsible for the initial arbitrage should pay when a previous shareholder has taken the benefits. Albeit, however, that investor due diligence in purchasing the companies would have considered the quality of the company's balance sheet. If private ownership or use of private capital to finance utility models that serve the public is desired, the sector needs

to remain attractive to equity and debt investors. This would mean a fair balance for increasing equity participation and debt reduction that generates a fair and sustainable return for investors (not too high and not too low). Customers should not be asked to pay too much for this.

We think it would be unrealistic to assume that there is no role for private capital in the sector, given that there are pressures on the public purse and actual or perceived underfunding of public services in the UK that would compete with the water and wastewater sector if public funding were the sole source of capital.

Within the English private sector model, we think that the quality of the shareholders and diversity of ownership matters. Listed companies were to an extent customer owned companies at privatisation (although are increasingly less so as individual shareholders have sold their stakes to institutional investors or the companies have been taken private). Some interviewees told us that listed companies are beneficial in terms of transparency, whereas others felt that shareholders of listed companies are less engaged in driving the performance of the company than private owners.

Within the privately owned companies, pension funds and long-term owners tend to have a better alignment with the long-term needs of the companies than funds that only intend on holding companies for a short period (whose interests are far less aligned with the needs of customers and the environment). Overall, we conclude that long-term owners are critical to the success of the private sector model, as their purposes and interests align with addressing the challenges the sector faces while making a sustainable return on their investment.

Mutualisation

Dŵr Cymru Welsh Water (DCWW) has a mutual structure and constitutes the main ownership model in Wales (with the second Welsh operator being a small company, Hafren Dyfrdwy, which is part of publicly listed Severn Trent Group).

The interviews and literature review indicate that the mutual model is proven to work in Wales, taken alongside the governance provided by Welsh Government. While it may help build public trust, a mutual structure is not guaranteed to perform better either operationally or financially than a privately owned company. The necessary focus on culture and why that is needed are similar to the issues mentioned for employee ownership above.

Mutual ownership could potentially create a more purposeful organisation if focus is given to the culture and incentives of the organisation. In a mutual, there needs to be a focus on the company culture from the members, in particular that the 'not for dividend' status of the company does not result in inefficiency over time.

DCWW also needs to be seen within the context of the England and Wales water sector as a whole. Having the benchmark of privately owned companies may help avoid some of the

potential pitfalls of a mutualised structure because efficiency is being constantly compared (the same is true of nationalised Scottish Water and Northern Ireland Water).

Public Ownership

Prior to 1989, water and sewerage companies in England and Wales were nationalised. The Scottish and Northern Irish sector remains public, and is a widespread model used for utilities globally.

A pertinent concern for potential renationalisation is the poor performance of English and Welsh public sector entities when they were government owned. In the first two decades following privatisation, the water industries in England and Wales achieved 30% more cumulative productivity improvement than comparable industries. When compared to public sector productivity, the water sector was 60% more productive.^{9,10} Although, as Ofwat notes, the gains have slowed in recent years. Since privatisation, leakage has been reduced by a third, and customers are five times less likely to experience unplanned interruptions.

Another consideration with any significant structural reform is whether the reform can be implemented at a time when the sector needs to focus urgently on delivering service improvements, particularly but not exclusively to reduce sewer overflows and improve water resource resilience. A major change in water and wastewater ownership models could cause a distraction while the change is affected that could delay implementation of key improvements that the public are demanding.

We also need to consider the extent to which private capital (equity and debt) are needed to meet the challenges of the future, and therefore whether we need to better align the incentives of the existing English privatised model towards the desired outcomes or make more radical changes. While private capital is used in partnership with public ownership in many sectors (e.g., it is increasingly used in the NHS albeit that the public is less conscious that this is the case), the model is currently open for reform, with Government mandating the replacement of all PFI contracts with a different model when they come up for renewal.

We note that, while the Scottish water sector has been able to access capital to finance investment, the public sector water company Northern Ireland Water has found it more challenging to finance investments through the public purse since its formation. We also note

⁹ [Earwaker, Private vs Public Ownership of Water and Sewerage Companies, First Economics, January 2018](#)

¹⁰ [Productivity Improvement in the Water and Sewerage Industry in England Since Privatisation, Water UK, September 2017](#)

that Scottish Water and Northern Ireland Water had the benefit of efficiency benchmarking against the privatised companies in England and Wales to drive efficiency targets and performance in the early years after their formation.

Overall, we think that if shareholders are to be compensated at a reasonable rate for re-nationalising the companies (companies are typically valued at the RCV or a multiple above the RCV), nationalisation is likely to be expensive. We think that remunerating the RCV would be necessary if the companies were to be nationalised while they remain solvent. If shareholders or bondholders were not recompensed for the transfer of ownership of a going concern, the reputation of the UK as a stable environment for shareholders and bondholders would be affected across all sectors of the economy. The benefits of nationalising the industry are unclear and may be dependent on the quality of governance, including availability of capital and consistent long term strategic focus on addressing the challenges.

Co-ordination and system operation

Our conclusion on system operators is that options that increase co-ordination and long-term strategic planning are likely to be necessary and potentially beneficial, although the optimal extent of this is more open to debate and could range from co-ordination such as regional integrated water cycle planning to full system operation. We have included options for improving co-ordination in our appraisal of water and wastewater ownership models.

Competition: Retail

We conclude that when using competition or market mechanisms to provide public goods in industries where there is universal service, policymakers need to be very clear about the intentions and provide sufficient protection for vulnerable customers (who may have a high cost to serve and may therefore be underserved by the retailer to save cost). The track record of consumer protection in competitive retail markets in the UK has been mixed, and consumer protection such as regulation of unfair contract terms has been needed even in more competitive sectors (such as telecoms).

We think that the customer protection and consumer detriment issues experienced in other markets (such as energy and telecoms) would likely be replicated if household retail competition were introduced in water and wastewater. Among other issues that need to be resolved, there is a disparity in choice of willing retailers between microbusinesses and large non-households in the existing non-household retail market.

Competition for project finance and delivery

Competition relating to the infrastructure itself, such as for large projects (i.e., DPC and designation under the Specified Infrastructure Projects Regulations, SIPR) may be beneficial, although has not been well tested in UK utilities yet. The benefits of delivery efficiency and helping incumbents to focus on core operations need to be weighed against potential

disadvantages if piecemeal delivery of water and wastewater infrastructure were to result in a lack of joined up service to consumers.

Whilst the asset being financed independently will deliver benefits to multiple existing water companies, impartial independent ownership and coordination of that asset's output may be more beneficial than an existing water company financing the project.

The PPP/PFI model is similar to DPC and SIPR and has been used extensively in various forms both in the UK and internationally. The quality of a private finance contract for infrastructure depends very much on the quality and fitness for purpose of the contract. For example, whether it allocated risks appropriately between the contract owner and the service provider, and the extent to which the service provider is incentivised to deliver the contract requirements efficiently. Scottish Water and Northern Ireland Water both hold PPP contracts, and the impact of these contracts on the overall efficiency of the companies has remained a concern to both their economic regulators. Northern Ireland Water decided to take one of the contracts (Alpha) back in house, which its regulator (UREGNI) reports resulted in a savings £13m that Northern Ireland Water returned to customers.

Multiple DPC and SIPR contract models are possible, in the same way that PPP contracts can take different forms, such as indeterminate build-own-operate, design and build only, or build-transfer-operate. PPP has also been used to take over operation of existing assets, for example the MoD's water PPP contracts and water concessions internationally.

Writing a contract with well aligned incentives that help the contractor to deliver exactly what the customer wants and needs is a similar challenge to designing incentives in a regulatory framework. It is not usually possible to have perfect foresight, therefore the incentives will be imperfect and are likely to become less fit for purpose over time, even if they were well specified at the outset.

Last mile competition

There is also a regulated market for ownership of networks serving water and wastewater customers in specified local areas, usually households on new housing developments (known as the 'NAV' market). This competition supplants one asset owner with another, and customers still do not have a choice over who supplies them. If they are well run and innovative there is potential for NAVs to challenge incumbent water companies to improve their performance, but this is linked to company culture and commercial focus rather than the ownership model.

NAVs are in most cases reliant on incumbents for bulk supply of water, and usually also for wastewater removal. This has the disadvantage of making the value chain for water more fragmented and requires NAVs to have good relationships with incumbent water companies so that they can serve customers well.

NAVs often have other companies in their Group that provide wholesale services such as gas and electricity to their customers. There is a potential benefit to customers from receiving multiple utility services from a single provider on site. Other NAVs perform services that will become increasingly important for sustainability, such as water reuse, sustainable drainage, and supporting developers to deliver nutrient neutrality.

Some niche players in the NAV market target taking sites that are difficult for wastewater companies 'off grid' and installing on site wastewater treatment. This reduces the cost to consumers overall, given that local solutions in such cases are lower cost than connection to the main sewer, and may avoid incumbents having to make substantial network reinforcement investments.

Other forms of competition

Other forms of competition, such as the bioresources market, water resources trading, and the market for bidding into companies' water resources plans do not significantly impact sector ownership and only have a small impact on governance, although may have potential to improve efficiency. We do not consider these models further.

Employee Ownership

Various forms of employee ownership are available from the Limited Liability Partnership model, where senior leaders own the business to the partnership model, such as John Lewis (for example), where all employees are partners in the business. Different types of employee ownership will have different impacts on company purpose and employee engagement. We considered whether a John Lewis style model would have the potential to create a more purposeful sector.

Our conclusion on employee ownership from the literature and interviews is that it has potential to deliver a purposeful organisation that delivers great service for the environment and customers providing there is constant focus and reinforcement of the culture of the company. At their best, employee-owned companies achieve this, whereas with lack of focus they may become inefficient or unionised (delivering benefits for the employees either with respect to conditions or pay, but not necessarily great service for customers and the environment). There could be a benefit with respect to customer trust in the sector and/or retaining employees, as John Lewis is recognised by the public and trusted because of its partnership model.

Portsmouth Water undertook a management buyout and was employee owned for a time, showing that the model can work in the water sector. For both employee-owned companies and mutuals, the initial buyout is likely to be mainly through debt, as equity capital may not be sufficiently available. This may mean a paydown period to reduce gearing to sustainable levels, making short term financial resilience a risk. Introduction of private equity may be required if significant investment is needed. In Portsmouth Water's case a private equity

investor was introduced when the company needed to finance the building of the Havant Thicket Winter Storage Reservoir.

Customer Ownership

Our conclusion on customer ownership is the same as for employee ownership and mutual ownership. The model could potentially create a more purposeful organisation if focus is given to the culture and incentives of the organisation. In a customer owned company, the cultural focus needs to be aimed at ensuring that the interests of all customers are considered, and influence is not used to favour specific customer groups.

As with the other models, the availability of equity to finance growth cannot be ignored. There is an issue with a lack of capital to facilitate customer ownership, and potentially paydown, which is the same as for mutuals and employee-owned companies. Funding of future capital in an entirely customer owned company might also prove difficult without private equity capital. Partial ownership by customers or employees is likely to be more feasible in an environment where investment needs are growing (rather than stable or declining).

We can see merit in increasing the direct influence of customers over the service that water and wastewater companies provide, if a satisfactory way can be found of representing the range of needs and preferences across entire body of customers fairly and inclusively. This is difficult to achieve in practice as no one person can feasibly represent the lived experience for the entire regional demographic. It is also difficult to pull in holistic, inclusive evidence and decide on any trade-offs that might be needed to deliver the best all round outcome. That said, if the industry is to deliver great service for customers and the environment, we must continuously strive for tailoring of the service to meet everyone's needs.

We do not necessarily think this would require that customers hold an equity stake in the company, although we can see merits to this if the incentive structure allows customers a genuine voice, and if customer Board members with a sufficient breadth of experience and advocacy could be found to represent great service for both customers and the environment. We see this as a high bar. There is no guarantee that customers would take a longer-term focus, be inclusive to all customer groups, or that they would necessarily promote good environmental outcomes if they were given a stake in the water and wastewater companies.

If customers took a minority holding in a company, and private equity is financing all major growth there may be issues with the weight given to the customer shareholder's views that would need to be addressed through an incentive framework. Interviewees from private equity backgrounds also pointed to a potential conflict with Directors' duties to promote the success of the company, although we think that a long-term sustainable business model would favour a resilient company that meets the needs of customers and the environment.

Community water

We conclude that the ‘prosumer’ (someone who both produces and is a consumer of goods or services or in this context people who may become involved with designing, customising or making products for their own needs and they may participate more actively in the production of a product or service.). This may be akin to extending of the community energy model to water, in which consumers are involved with the designing, customising or making products for their own needs, may have benefits if it increases customers’ participation in service delivery. In particular, delivering water efficiency, greener solutions for last mile water, and potentially changing people’s behaviours. We think that the sort of infrastructure that could be crowdfunded in the water sector is likely to be too expensive to be workable via community companies currently (e.g., greywater reuse and rainwater harvesting). In future, when technology becomes more mainstream and costs reduce, community water companies may become a more promising option.

The potential downside of community models is the same as for NAVs: if the water and wastewater value chain becomes increasingly fragmented and localised there may be downsides for local resilience that need to be managed (especially whether top up supplies from the wider network would be available when local supply is scarce), and there will certainly be a need for greater co-ordination. That said, local reuse schemes could improve resilience by helping alleviate local issues on water networks (such as low pressure or even supply interruptions experienced at the extremities of a network during dry weather and other periods of high demand).

Optimal size of water companies

We conclude that reform of the sector through merger control is an option that could be considered more systematically. While it may be unduly disruptive to force structural change on the sector, a merger regime that encourages companies with appropriate scale economies (without becoming too large) could potentially be beneficial. A stronger policy position on the merger regime could also be used to create greater coordination in the sector, for example placing fewer controls over mergers of smaller companies that share boundaries and where, therefore, there could be benefits to resilience from joining up and improving transfers of water and water networks.

Conclusions on ownership

There is very little either in the literature or from our discussions with interviewees to suggest that any one model is ‘best’, or that ownership type is the key factor in the delivery of great water and wastewater services for customers and the environment. Even within the data published from English water companies by Ofwat there is a range in performance, customer satisfaction and financial resilience that doesn’t paint a clear picture as some companies are outperforming and some are underperforming. There may be issues such as pollution and storm overflows that have captured the attention of the media and the public, however such

issues cannot be levelled at the ownership model, given that there is a range of positive and negative performance against regulatory targets that are reflected by Returns on Regulatory Equity.

How effectively the models work depends on governance, cultural, regulatory, financial, and customer factors. We think that focus needs to be given to why some models work better than others in some contexts, whether these conditions can be created in the water and wastewater sector, and whether ownership change is needed in addition to creating appropriate conditions to deliver more effectively. Ofwat have created new Performance Commitments for PR24 that include River Water Quality and Storm Overflows. The sectoral focus or lack of in certain areas, does not equate to ownership models and structures being the root cause of the problem.

We note that most interviewees did not support significant reforms to water and wastewater ownership models and tended to point towards reforms of governance arrangements. Some interviewees noted that, while DCWW has a higher level of trust among its customers due to its ownership model, it does not necessarily perform significantly better than privately owned water companies. We agree that it is unclear whether major reforms to industry and service models would have the desired beneficial effect to address current industry challenges either on their own in the short term or in combination with governance reforms.

The literature research identified many sources that potentially contain intrinsic bias towards public or private ownership, however the more impartial and empirical studies demonstrate there is no clear evidence that supports one model being better than another. The analysis of data published by Ofwat on financial resilience, performance and customer satisfaction all further supports this view, as there is a range of risk in terms of financial resilience, customer satisfaction and overall performance against regulatory targets (Performance Commitments) with Return on Regulatory Equity being a surrogate for general over or under performance. Some companies are performing well across all metrics, others across some, and some are underperforming and demonstrating financial risks, and all are within the current private sector ownership model. The evidence obtained does not point to a systemic failure of the industry, nor does it provide clear evidence that the ownership models and structures would lead to a material benefit or vastly improved outcomes in the short to medium term.

Hence, we see merit in taking a more measured approach. We think an adaptive pathways approach would help the sector move towards reforms that would deliver great service for customers and the environment. Delivering 'no regrets' reforms relating to governance, culture and incentives that address the issues the sector faces in the short term is likely to be beneficial. The sector can then evaluate whether longer term reforms to service models are necessary. For example, if certain types of owners are considered to be more problematic, is there a role for regulators and policymakers to vet shareholders and only allow equity that aligns with the industry's desired purpose to enter? If this is effective, the need to make more radical changes to water and wastewater ownership models might not be needed.

3.2 Gaps and issues in the current water and wastewater industry and service models

Several issues and gaps were identified and discussed by interviewees, summarised in Figure 4 below:

Figure 4 Gaps and issues identified by interviewees



Without greater **consumer and societal knowledge**, about what the sector delivers and the challenges it faces, it will be problematic to manage the demands and expectations of society. Changing the sector model alone will not address this. Greater **information** is needed to bridge gaps between the present and the future and ensure that the solutions that might be needed will address the challenges efficiently and effectively, for example if nothing else changed what would a future with zero pollution from the water sector look like. There is room for improvement in providing society with clearer and more accessible information to improve **trust and transparency**, on what the trade-offs and compromises are, and in key areas such as where does the money they pay through bills go, how much goes on delivering the service and how much goes on CEO pay. There are significant long-term challenges to address climate change and environmental harm, and **vision and leadership** is needed to ensure the industry has a clear direction of travel, especially where difficult choices are needed to deal with current and future issues. This needs to ensure that government leadership is effective in relation to key issues, and that regulators are pulling in the same direction, not different ones. This will be imperative to finding the right balance between the needs of society including affordability and fairness, and the needs of the environment.

Regulation and governance need to be appropriate, and to avoid unintended consequences or driving the wrong actions and behaviours, whilst ensuring the core purpose of regulation is robust in terms of ensuring overall value to society and the environment is delivered. In the digital age, information spreads rapidly and the expectations of society may be influenced by this in the future, and therefore regulation and governance may need to evolve and adapt to keep pace with such changes. Outcomes need to be considered carefully, to avoid missing key requirements or driving inappropriate behaviour change (e.g., people shifting to showering at work/gym rather than at home to reduce PCC).

Behaviour is something that needs to be considered from a broad perspective of society and how people perceive water and its true value, through to the behaviour of government, regulators, and water companies, and how key issues are managed. The sector may need to consider how behaviour might be changed effectively, and **collaboration and integration** will be necessary to achieve this. This might involve water use habits through to the disposal of wet wipes and fats/oil/grease. Exploring these challenges might not require a government or water company led approach but could be addressed by other routes such as social media or targeted advertising using digital channels. Sharing open-source data and information could be beneficial. More integrated approaches through nature based and catchment solutions may add complexity in terms of who pays, who benefits, and solutions, and may involve greater numbers of stakeholders from multiple sectors, and this will require not only a collaborative and integrated approach, but flexible regulation and a need to be adaptable.

The fixation with centralised solutions needs to change, and **community resilience and participation** is likely to be increasingly important, not only to address issues and bridge gaps in relation to trust, but also to ensure communities have real input into what happens and a say in the solutions being implemented. Local decentralised solutions might not add to the RCV of a water company, but might be the best-value route, and how to incentivise, encourage, support, and nurture these options is an area that requires leadership, vision, and regulatory support.

Funding is always a vital element that underpins everything else and needs to consider issues such as intergenerational fairness and ensure that there is sufficient funding for step changes that are increasingly looking likely to be needed to address current and future risks and issues, in a world of competing priorities.

4. Reform Options

Overall, it is evident that the sector faces some challenges today, and in the longer term. It is clear that some form of change is needed, however few of the interviewees supported the need for radical change to the ownership structure or model as being the way to deal with the gaps and challenges. There were many suggestions and ideas discussed, some tactical and some more strategic in nature. Few interviewees felt that changing the ownership and structure would have a material impact and most pointed towards other areas to focus on. Below we have summarised the suggestions and options through a list of problem statements, potential solutions, and desired outcomes.

Table 3 Matrix of options and recommendations for reform

Problem statement	Potential solution	Implementation considerations	Desired outcome
<ul style="list-style-type: none"> Regulation pulling in different directions, perceived lack of leadership on strategic issues, and not all regulators have to consider affordability and fairness resulting in tensions, increasing mandatory environmental targets that without mature public debate could lead to affordability issues in the future. 	<ul style="list-style-type: none"> Development of consumer duty regulations, particularly for non-economic regulators to ensure customers and cost to society must be considered by all regulatory functions as part of delivering their core regulatory function and policy setting. 	<ul style="list-style-type: none"> The UK Consumer Duty in the financial services sector sets higher and clearer standards of consumer protection. The FCA journey and timescales could be reviewed, and a water sector equivalent developed. This could be led by government, or Ofwat with CCW. Likely to take several years to develop and implement.¹¹ <i>(We note that as this report is being finalised Ofwat are</i> 	<ul style="list-style-type: none"> Ensuring a healthy balance between the needs of society, costs and affordability and the needs of the environment. Consumer duty regulations would provide greater protection for customers, and ensure future policy is evidence based and there is appropriate public understanding of the needs, solutions, costs and benefits. This would help to ensure that the EIP

¹¹ [PS22/9: A new Consumer Duty, Financial Conduct Authority, July 2022](#)

Problem statement	Potential solution	Implementation considerations	Desired outcome
		<i>consulting in relation to licence changes with respect to customer service and potential licence changes.)</i>	targets and associated costs are delivering value for people and not just the environment, recognising there is overlap between these.
<ul style="list-style-type: none"> The current model has room for improvements in customer representation, which may improve customer trust in the sector through having meaningful influence on key issues, and not just engagement on strategic plans or via customer satisfaction type surveys. 	<ul style="list-style-type: none"> Several potential solutions could be considered to improve customer representation: <ul style="list-style-type: none"> Enhanced roles for NEDs to provide greater focus on customer value, or alternatively a supported role for NEDs. Consideration needed to ensure NEDs have sufficient power and influence, for example being responsible for Citizens Juries. ICG or customer representation on boards. Risk that a two-tier board meeting ends up taking place. Citizens Juries – to increase societal participation in decision making on key issues. Ongoing engagement throughout AMP periods with meaningful consideration and two-way communication with boards. Open challenge sessions. 	<ul style="list-style-type: none"> The options may be used in combination. The views of regulators, companies and customers should be considered through further research to determine effective means to improve customer representation. Citizens juries could be managed via NEDs or CCW may take a role in setting up citizens juries in relation to key issues. There may be potential to develop regulations that support this. 	<ul style="list-style-type: none"> These potential solutions are all considered relatively tactical in nature, but if developed could help the industry demonstrate its role as being positive for society and the environment and being open to meaningful challenge.

Problem statement	Potential solution	Implementation considerations	Desired outcome
<ul style="list-style-type: none"> Enhanced leadership and governance are required as there are separate regulators with different requirements and agendas, to provide clearer strategic direction for the sector including the needs of society and customers as well as the needs of the environment, and importantly recognises there is a balance between the needs of people and the environment. 	<ul style="list-style-type: none"> Several potential solutions could be considered, with the creation of a senior role in government and several potential supporting actions: <ul style="list-style-type: none"> Creation of a Chief Scientist role to provide leadership, develop ethical regulations, ethics advisory functions, and ensure mature public debate relating to outcomes and cost with evidence led policy. A forum to get water company senior managers, ministers, and regulators to discuss key issues. This might be like the National Drought Group, for example. Ethical business regulations. Promotion of shared responsibilities – greater understanding between government, regulators, companies, and customers. Long-term outcomes linked to real investment need to ensure mature public debate on key issues and challenges. Development of evidence-led policy derived from working 	<ul style="list-style-type: none"> This would need to be implemented through government. The current government chief scientific advisor (GCSA) role may be too broad and is not a statutory role. There could be consideration of a specific government advisory role for the water sector, which may be either statutory or non-statutory. This role may then recommend further actions e.g., recommend development of ethical business regulations. This would be considered relatively easy to implement if there is sufficient political will to create a role and supporting team, and relatively low cost in comparison to moving to new sector models. 	<ul style="list-style-type: none"> Creation of a chief scientific role or senior role in government would advise on water sector issues and long-term challenges as well as being involved in public emergencies. The role could act as an intermediary between the water sector, regulators, and policy makers, and would not provide a single opinion but act as a conduit for advice and provide leadership on strategic issues. This role could provide greater focus on a sector that delivers a service that is essential for life, help to drive sector change, and support the rebuilding of trust and confidence in the sector.

Problem statement	Potential solution	Implementation considerations	Desired outcome
	<p>back from solutions to long-term challenges rather than focusing too much on short-term price and profits, by taking a more balanced approach.</p> <ul style="list-style-type: none"> • Creation of an ethics advisor role. 		
<ul style="list-style-type: none"> • There is considerable focus on the environment, and social performance tends to lag behind in terms of importance. The current model faces challenges such as managing staff turnover and brain drain to better paying sectors. This may be particularly acute in some supply chains but is perhaps not likely to be identified easily by the current regulators, stemming from a lack of social based regulations, metrics, or sufficient focus. 	<ul style="list-style-type: none"> • Improvements in regulation to provide greater focus on social measures, metrics, and outcomes across the sector. This might include consideration of society in general terms, customers, or employees, or combinations of all these groups. • These might include: <ul style="list-style-type: none"> • Human capital – representing the people who contribute to the products and services offered by companies. May include employee relations, working conditions, employee training and development, and third party/supply chain standards. • Product liability – covering the impact of the products and services on society, quality of life, safety, and equitable 	<ul style="list-style-type: none"> • This would require government support and consideration around how to develop these regulations. There is a risk with increasing focus on ESG, that the sector doesn't align with the wider direction of travel. This may take a period of time to develop through initial scoping, consultation, drafting, and implementation, and would need to include consideration as to whether legislative changes are required to support and enable the development of social regulations. 	<ul style="list-style-type: none"> • The increased level of focus on the “S” (social) in ESG would reduce the likelihood that companies focus on mandatory requirements such as water quality compliance or mandatory environmental targets and obligations. This will help to ensure that social aspects carry greater weight in the balance between cost/affordability/profit and the needs of society and the environment.

Problem statement	Potential solution	Implementation considerations	Desired outcome
	<p>outcomes.</p> <ul style="list-style-type: none"> Stakeholder opposition – dealing with increasing demands for transparency and ethics in business, including controversial sourcing, supply chain transparency, and community relations. Social opportunities – ensuring companies are a force for good and contribute positively to society. This might include finance and equitable access to services, donations, skill sharing, and volunteering. 		
<ul style="list-style-type: none"> There are significant trust issues facing the sector, and whilst most information is published somewhere, it is not necessarily easy to access, all in one place, or particularly digestible for customers and the public. The perception that the industry isn't being transparent or can be trusted is not helped by the way information is currently provided. 	<ul style="list-style-type: none"> Some interviewees discussed a balanced scorecard type approach that provided customer-centric information in an easy to access and easy to digest location. This should be provided by an independent and trusted body rather than the industry itself, as is currently the case with websites such as Discover Water. The following is not intended to provide a detailed specification of requirements but some guiding 	<ul style="list-style-type: none"> This would be considered relatively easy to implement, and several steps are required: <ul style="list-style-type: none"> Undertake research with public. Undertake research with academia or industry commentators. Consider the importance of an independent publisher for information to improve transparency and trust. This is not likely to be the industry 	<ul style="list-style-type: none"> This is a key step in improving transparency and trust. Society cannot trust a sector that doesn't paint a fair and balanced picture of itself. This would seek to address the issue that information is spread and published across too many sources. People should be able to understand the answer to key questions, such as who really owns my water company or how much did the CEO make compared to how much went on

Problem statement	Potential solution	Implementation considerations	Desired outcome
	<p>points and principles that will need to be explored further with customers and society to understand through research, what they'd like to know:</p> <ol style="list-style-type: none"> 1. Simple. 2. Access key information in one place. 3. Obtain performance data that is up to date, accurate, and can be trusted. 4. Puts the UK into context e.g., world leading in terms of water quality compliance. 5. Includes some historical trends and context. 6. Covers financial information as well as performance data. 7. Provides an easy-to-understand breakdown of customer bills, including what money was spent on, how much was profit, how much was CEO pay etc. This might be similar to how Council Tax has to be presented. 8. This should allow easy comparison between companies and provide an open and honest perspective 	<p>itself, but CCW could be considered the vehicle to achieve this.</p> <ul style="list-style-type: none"> • Scoping out the technical requirements. • Implementation. • This would be considered a "quick win" and could be implemented within 18 months. 	<p>investing in infrastructure and the environment. This recommendation aims to overcome much of these issues.</p>

Problem statement	Potential solution	Implementation considerations	Desired outcome
	<p>on key areas of concern for customers and the public.</p> <ul style="list-style-type: none"> Discover Water might be considered to be 80% of the way there but has several issues such as not portraying the positives fully, which is evident from the difference between drinking water quality compliance at the tap and customers trust that their water is safe to drink. The existing website doesn't include much history and some of the Performance Commitment data is about regulatory targets and percentage reduction. Some additional data on metrics and historical data could easily be made available for those that wish to delve slightly deeper than a headline figure. The development of a portal to enable society to raise issues and share views in general and not about their specific water company could be considered. 		
<ul style="list-style-type: none"> There are concerns around how effective governance and regulation is at separating efficiency from under-investment. 	<ul style="list-style-type: none"> There are opportunities to provide greater focus on regulating companies on what they said they'd deliver in strategic plans, 	<ul style="list-style-type: none"> This is likely to require some mature debate and consideration about how to potentially blend output and outcome-based 	<ul style="list-style-type: none"> This could assist in helping to ensure the industry is focused on making sustainable investment to tackle key issues and not

Problem statement	Potential solution	Implementation considerations	Desired outcome
	and not just the outcomes, to reduce the risk of underinvestment being portrayed as efficiency. Examples cited included where companies might improve performance in the short term on customer minutes lost/interruption to supply by doing less infrastructure investment. This provides a short-term benefit, at the expense of long-term service and sustainability.	regulation. Consideration around high-level outcomes and then ensuring companies deliver efficiently against their plans, including consideration as to where adaptive steps or flexibility is needed.	maximising profit and short-term behaviour, leading to concerns about CEO pay and profit being at the expense of society and the environment.
<ul style="list-style-type: none"> Fines due to poor performance could be used with greater public say in what happens to the money. 	<ul style="list-style-type: none"> Opportunity to provide customers or the public with a say in where fines are reinvested. This doesn't have to include a rebate option but may be appropriate. This may provide a feeling of more active involvement in what is done with fines and could be used for societal and/or environmental good. 	<ul style="list-style-type: none"> This may be already happening in part, and likely to be a quick win. 	<ul style="list-style-type: none"> The opportunity to include societal or customer engagement on what to do with fines is likely to help to improve the feeling that society has greater influence over the privatised regulated monopolies.
<ul style="list-style-type: none"> Limited control over whether shareholders are fit for purpose for a sector that provides a public service and can impact on the environment. 	<ul style="list-style-type: none"> Vetting of shareholders, for example UKSV, to improve the management and mitigation of risk associated with ownership/shareholders. 	<ul style="list-style-type: none"> Likely to be affordable, quick, and relatively easy to implement. Will require discussion and government will to act. 	<ul style="list-style-type: none"> Improve sustainability, resilience, fairness and support the sector being financeable in the long-term as this helps to maintain a positive perception of the sector.
<ul style="list-style-type: none"> Significant capital investment schemes can have significant bill impact, and appropriate funding 	<ul style="list-style-type: none"> Public-private partnership options that may be viable for consideration for the delivery of 	<ul style="list-style-type: none"> Already in progress, with potential to consider further nuances and different approaches to provide 	<ul style="list-style-type: none"> Could be used to spread costs of significant schemes, supporting intergenerational or inter-regional

Problem statement	Potential solution	Implementation considerations	Desired outcome
mechanisms are needed for large schemes.	large investment programmes or projects include: private finance (DPC), Design – build – finance – operate (where private companies deliver and run assets through long-term contracts), National business development programmes, Government ownership, build to order, build operate transfer, build own operate transfer, build own operate.	funding for strategic investment. Could become complex in terms of bill setting over time and needs consideration about where the use of alternative mechanisms is appropriate. Requires careful consideration in development of contracts to allocate risks between parties and define levels of service.	fairness.
<ul style="list-style-type: none"> Addressing future challenges will require improvements in integrated planning and approach, long-term planning, and consideration around how to enable decentralised solutions where appropriate. 	<ul style="list-style-type: none"> The sector spends a considerable time and effort on long-term planning, however this is potentially becoming too detailed in specific subject areas (WRMPs, DWMPs) and not taking more of a catchment and cross-sectoral perspective. For example, flood management, energy, economic considerations, food, and agriculture all interact, and the transition to net zero may require significant changes in the current systems to address the future challenges. For example, the hydrogen economy needs to consider the use of water. Several options need to be considered including: 	<ul style="list-style-type: none"> A broad range of interviewees highlighted a series of issues with the current planning process, particularly its ability to deliver timely and efficient longer-term investments. These concerns have also been highlighted in the recent HoL review, which identified concerns regarding chronic underinvestment as one of the main underlying causes of recent poor performance by the sector. The HoL's review also noted concerns regarding the nature of decision making and the management of trade-offs between keeping bills low in the short term versus investment for longer-term service and environmental performance. 	<ul style="list-style-type: none"> This would support ensuring clear roles and responsibilities, perform for society, and protect and enhance the environment in the long-term.

Problem statement	Potential solution	Implementation considerations	Desired outcome
	<ul style="list-style-type: none"> Enhanced integrated planning – this could be achieved through structural changes or greater collaboration and multi-sector and multi-institutional approaches, perhaps focused on the catchment scale, to incorporate not just water and wastewater services but also flood management and mitigation, and food production/agriculture along with other sectors. Enhanced regional planning – potential to widen the remit of the regional water resources planning groups beyond water resources into other subjects to provide a more holistic and joined-up approach (e.g., regional DWMPs, asset management). Decentralisation – providing a mechanism to increase regional involvement, such as local mayors, in decision making. Consensus-based approach to strategic planning – sitting 	<ul style="list-style-type: none"> Planning is currently highly functional in nature, and the decision-making process for trade-offs lacks openness, collaboration, and transparency. Some of our interviewees have raised the potential to consider a more collaborative approach, which would help to ensure a more joined-up approach to long-term planning, prioritisation, and customer value. Approaches have been suggested that would not require any changes to either legislation or regulations, and would be consistent with the current duties, responsibilities, and accountabilities of companies and public bodies. A shift in culture and leadership would be at the heart of this opportunity, and the proposal by the HoL review for a national water strategy could provide a useful hook. This will not be quick to implement but could be key in the longer-term. 	

Problem statement	Potential solution	Implementation considerations	Desired outcome
	<p>with enhanced integrated planning to ensure there is a greater consensus and public participation in key decisions.</p> <ul style="list-style-type: none"> Development of a proactive policy position for mergers and acquisitions. Several interviewees talked about the size of water companies, citing some being arguably too large and others too small to be effective. Having a proactive position in terms of what a future ideal might look like could be a helpful step rather than being reactive to M&A. 		
<ul style="list-style-type: none"> If other improvements cannot deliver resolution to the current sector challenges and there continues to be issues and concern relating to performance, for example short term behaviour and profiteering, failing to invest adequately for the long-term and ensuring the right balance between profit, affordability and fairness, and the needs of society and the environment, the natural conclusion may be that the sector model needs to change. This may include company ownership and 	<ul style="list-style-type: none"> Structural and ownership changes that are considered more viable: <ul style="list-style-type: none"> Private - employee owned Private - employee owned (MBO) Private - customer owned (mutual) Private - employee owned >25% Private - customer owned >25% Private - >25% listed option (HoL) Private - low gearing 	<ul style="list-style-type: none"> An adaptive pathways approach is recommended, these changes are likely to be significant and would be potentially expensive and time consuming to implement. There are concerns about whether this would be financeable, deliverable, and affordable. The recommended approach is to develop an adaptive pathways approach, first considering the other recommended solutions and in parallel further exploring views on these options with government, regulators, water companies and 	<ul style="list-style-type: none"> There are a wide range of potential improvements to the private sector model, however it is recommended that these are considered as long-term options should other recommendations not be possible to address the challenges and issues of the sector. Further research would be needed to include societal and sectoral engagement before converging on a smaller subset of potential options.

Problem statement	Potential solution	Implementation considerations	Desired outcome
structure, and governance and regulation.	<ul style="list-style-type: none"> • WOCS and SOCS • Unbundling - water resources • Merge regulatory functions, either structural or removing silos • System Operator • Multi utility – this could this be collaboration or structural. 	the public. The traditional debates tend to centre on public versus private, and, neither model is fully one nor the other. A private regulated monopoly is not able to act and behave as a typical private company, and public sector services are often in part outsourced in some capacity to the private sector anyway. A mature public debate on different ways the private sector models could evolve would be more helpful than awaiting sector issues and failure.	

Few of the recommendations sit clearly or neatly with a single body or organisation, CCW will therefore need to discuss these with stakeholders to consider how these might be moved forward. The one recommendation that could sit firmly with CCW is the balanced scorecard, because CCW is independent and therefore consumers should be able to trust information that CCW publishes. Information published by the water companies, or their industry bodies is not impartial, whereas CCW could publish information from a neutral position, which would carry greater weight with the public in terms of trust. CCW has powers to collect information under the Water Industry Act, however we believe that much of the information is likely to already be available but may not be presented in a way that is providing information that customers wish to see. We therefore propose that CCW works with the regulators such as Ofwat, EA and DWI to compile a dashboard that covers performance, finance, and does not exclude emotive issues such as contextualising senior leadership pay framed against overall investment and customer bills.

CCW's existing Watermark dashboard could be enhanced and expanded to take in more of the issues that customers care about. An alternative would be to make Watermark more focused on tracking whether the sector is meeting the outcomes that customers want (as opposed to the KPIs that are currently focused on by Ofwat). There is likely to be further work required in designing a dashboard that is informative, accessible and presents an impartial and clear view of the industry and what is being achieved as well as areas that are requiring improvement and providing a clear context to issues that currently appear in the media often without context. A fair and balanced representation of the industry is needed, from a source that is trustworthy, with information presented in a way that is meaningful to customers and presents information in a way that shows there is not something to hide or bury in a difficult to access source, is considered a key requirement in the short term.

The diagram below summarises a suggested timeline for further actions.

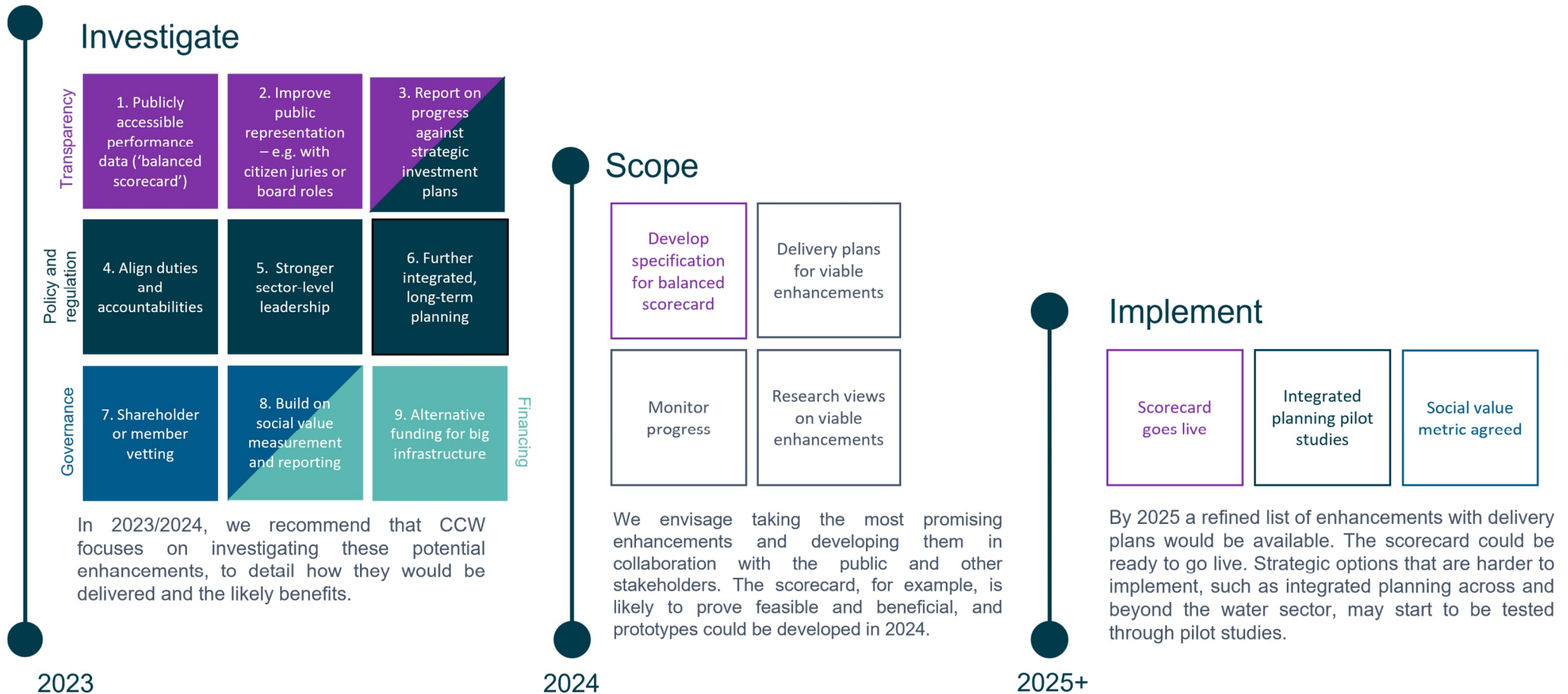


Figure 5 Recommended reform options

Note: Purple indicates recommendations relating to transparency, navy relates to policy and regulation, blue relates to governance, and teal relates to financing.

5. Conclusions

The literature review considered 185 papers, reports, websites and journal articles on company ownership or structure, financial performance, and customer perceptions. Over 20 interviews were undertaken, drawing on expert knowledge from the water, energy, transport, environmental, charity, and finance sectors, with interviewees offering UK and international perspectives. We obtained an 'outsider' perspective as none of the interviewees works in the English or Welsh water sector.

The following conclusions were drawn from the literature review and stakeholder interviews about company ownership models:

- An overhaul and substantial change to the industry and company ownership would not address the main problems experienced within the water sector in the short timeframe required.
- Nationalisation or public ownership is likely to be expensive, with estimates ranging from £14bn to £100bn. The benefits are also unclear, with no strong correlation between ownership (public versus private models) and performance, levels of service and investment. However, public models tend to have less acute trust issues, mainly due to there being no dividend and less concern over things such as CEO pay. English and Welsh public sector entities performed poorly when they were government owned.
- For private ownership, in the context of higher interest rates on debt and increasing investment needs for the sector, the adoption of higher gearing and securitised structures in the past may cause difficulties if levels of interest from equity were to reduce (e.g., due to competition with other infrastructure investments). Reducing gearing is likely to be difficult because, while it is not fair that customers pay, it may also not be fair that investors that were not responsible for the initial arbitrage should pay when a previous shareholder has taken the benefits. If private ownership or use of private capital to finance utility models that serve the public is desired, the sector needs to remain attractive to equity and debt investors. This would mean a fair balance for increasing equity participation and debt reduction that generates a fair and sustainable return for investors (not too high and not too low). Customers should not be asked to pay too much for this. We think it would be unrealistic to assume that there is no role for private capital in the sector, given that there are pressures on the public purse and actual or perceived underfunding of public services in the UK that would compete with the water and wastewater sector if public funding were the sole source of capital.
- For competition to effectively provide public goods in industries where there is universal service, policymakers need to be very clear about the intentions and provide sufficient protection for vulnerable customers (who may have a high cost to serve and may

therefore be underserved by the retailer to save cost). The track record of consumer protection in competitive retail markets in the UK has been mixed, and consumer protection such as regulation of unfair contract terms has been needed even in more competitive sectors (such as telecoms). Competition relating to the infrastructure itself such as for large projects may be beneficial, although it has not been well tested in utilities yet. The benefits of delivery efficiency and helping incumbents to focus on core operations need to be weighed against potential disadvantages if piecemeal delivery of water and wastewater infrastructure were to result in a lack of joined up service to consumers.

- Employee ownership has potential to deliver a purposeful organisation that delivers great service for the environment and customers, providing there is constant focus and reinforcement of the culture of the company. At their best, employee-owned companies achieve this, whereas with lack of focus they may become inefficient or unionised. Portsmouth Water undertook a management buyout and was employee owned for a time showing that the model can work in the water sector. For both employee-owned companies and mutuals, the initial buyout is likely to be mainly through debt as equity capital may not be sufficiently available – this may mean a paydown period to reduce gearing to sustainable levels, making short term financial resilience a risk.
- DCWW has a mutual structure, which has proven to work in Wales, taken alongside the governance provided by Welsh Government. While it may help build public trust, a mutual structure is not guaranteed to perform better either operationally or financially than a privately owned company. The necessary focus on culture and why that is needed are similar to the issues mentioned for employee ownership above.
- Customer ownership was found to have similar requirements to employee ownership and mutuals; the model could create a more purposeful organisation if focus is given to the culture and incentives of the organisation. In a customer-owned company the cultural focus needs to be aimed at ensuring that the interests of all customers are considered, and influence is not used to favour specific customer groups. As with the other models, the availability of equity to finance growth cannot be ignored. Partial ownership by customers or employees is likely to be more feasible in an environment where investment needs are growing (rather than stable or declining).
- The 'prosumer' or community energy model may have benefits if it increases customers' participation in service delivery. In particular, delivering water efficiency, greener solutions for last mile water and potentially changing people's behaviours. We think that the sort of infrastructure that could be crowdfunded in the water sector is likely to be too expensive to be workable via community companies currently (e.g., greywater reuse and rainwater harvesting). In future, when technology becomes more mainstream and costs reduce, community water companies may become a more promising option.

We therefore found very little evidence that any one ownership model is 'best' and determined that reform should focus on addressing the present and future challenges facing the water sector.

6. Recommendations

The recommendation overall is to explore the reform options that can assist with improving and fixing the issues with the current water sector model, rather than suggesting a root and branch reform at this time. The options provided in this summary report will need to be considered in terms of the views of the public and the water sector itself, before determining which are likely to be most beneficial. It is recommended that the following options are considered as part of an adaptive pathways approach, rather than seeking to make changes to ownership models and structures where there is limited or inconsistent evidence that the models and structures alone are the key cause of the problems and challenges.

The following options are recommended as potential solutions that should be explored initially, with longer-term reform being considered only if progress cannot be made to improve the current sector model, summarised in table 4. Table 5 provides a very high-level overview of some examples of good international practices for the UK and a selection of other countries. This may provide some useful areas to consider for future work when looking at potential ways to improve the current England and Wales water sector.






Table 4 **Nine priority reforms for investigation**

Summary	Theme	What might this involve?	Why?
1. Publicly accessible performance data ('balanced scorecard')	Transparency	Make water company performance data available through a 'balanced scorecard' that provides the public with key information that is easy to access and understand, in a single location. This study suggested that the scorecard could include financial and performance data, comparison between companies, UK in the global context (e.g. world leading on water quality compliance), and some historical trends and context. This might also seek to address the more emotive aspects, for example providing a simple breakdown of how customer money is spent, and putting CEO pay into a wider context for the public.	There are significant trust issues facing the sector, and whilst most information is published somewhere, it is not necessarily easy to access, all in one place or customer friendly. The source of information needs to be independent rather than for example through Water UK.
2. Improve public representation	Transparency	Improve public representation in decision making through giving non-executive directors a greater role, setting up citizen juries, facilitating ongoing engagement sessions or open challenge sessions, and giving the public a say in how or where poor performance fines are spent.	Improve public trust in the water sector and increase participation in services.
3. Report on progress against strategic investment plans	Transparency, policy and regulation	Provide greater focus on regulating companies on what they said they'd deliver in their business plans, and not just the high-level outcomes, to reduce the risk of underinvestment being portrayed as efficiency.	There are concerns around how effective governance and regulation is at separating efficiency from under-investment. Providing greater focus on what is being delivered.
4. Align duties and accountabilities	Policy and regulation	Consumer duty regulations are being implemented in the financial sector to set higher standards of care and clearer standards of consumer protection, along with greater consistency across the sector.	Not all regulatory bodies have to consider customer impact i.e. bill payers.

		For example, Regulators like the Environment Agency or Natural Resources Wales might be required to consider the cost implications for customers of their monitoring or overflow spill reduction targets. This is likely to take years to develop and implement, but would mean that all regulators have to consider how their work impacts the public from all perspectives – as a citizen, consumer, nature user, etc.	Consumer duty regulations could reduce competing priorities and provide a focus to ensure all regulators have to consider affordability and fairness as part of their remit.
5. Stronger sector-level leadership	Policy and regulation	Clearer strategic direction for the water sector through a specific Chief Advisor who provides leadership and develops ethical and evidence-led policies, setting long-term outcomes at a national level.	There are separate regulatory bodies with different requirements and agendas, which can provide a perception of a lack of clear leadership.
6. Further integrated long-term planning	Policy and regulation	Water management affects local flood authorities, the Environment Agency/Natural Resources Wales, energy production, economic development, housing development, and agriculture, amongst others. Although considerable time and effort goes into long-term planning in the water sector (e.g. Water Resource Management Plans and Drainage and Wastewater Management Plans), a more cross-sectoral perspective could be beneficial.	Addressing future challenges will require more integrated long-term planning across different functions and sectors.
7. Shareholder or member vetting	Governance	Vetting of shareholders and equivalent company members. This is important as shareholders or members provide direction, scrutiny and funds influencing boards and the direction of travel for individual companies. This aims to improve the management and mitigation of risk associated with ownership/shareholders.	There is currently limited control over whether shareholders are appropriate for a sector that provides a public service and can impact on the environment. Some owners can act responsibly, whereas others are less

			responsible. Some form of mechanism to reduce the risk of 'poor' owners could be positive for the sector.
8. Build on social value measurement and reporting	Governance, financing	<p>An increased focus by both regulators and companies on social value, i.e. the value companies are adding to society, communities and nature. Measures of social value might include:</p> <ul style="list-style-type: none"> • Human capital – valuing employee knowledge, skills, good health, and education. • Stakeholder opposition – further considering transparency and ethics, including controversial sourcing, supply chain transparency and community relations. • Social opportunities – ensuring companies contribute positively to society. This might include finance and equitable access to services, donations, skill sharing, volunteering. 	The current model faces challenges, such as increasing staff turnover, which are particularly acute in some supply chains and are likely to be largely unnoticed by the current regulators due to a lack of social performance measures. Greater visibility in terms of social value is likely to be positive for the sector overall.
9. Alternative funding for big infrastructure	Financing	New funding models have developed for big infrastructure projects, including Direct Procurement for Customers and the Specific Infrastructure Projects Regime. Further investigation into funding models for big infrastructure projects is recommended. Possible options vary in terms of who assumes ownership when, and when independent finance is introduced through the lifecycle of the asset(s).	Significant capital investment schemes can have significant bill impact, and appropriate funding mechanisms are needed for large schemes.

Table 5 International examples of good practice

Examples of good practice				
				
<ul style="list-style-type: none"> • Integrated water resource management and governance • Demand management is a strength as is managing stormwater • Value of the industry has grown as demand has reduced • National water grid investment framework 	<ul style="list-style-type: none"> • Financing is sustainable through customer bills and outside investment • DrinkWater quality compliance • Generally seen as a leader in terms of both research and innovation • Typically compares well in terms of bill charges/tariffs whilst being profitable – overall good value 	<ul style="list-style-type: none"> • Infrastructure resilience and a programme of dam building demonstrates investment in key infrastructure • The value of the industry has grown as demand has fallen • Few issues from stormwater discharges to the environment 	<ul style="list-style-type: none"> • Strong history of investment (reflected in higher charges) • Long-term sustainable approaches to water • HamburgWasser ranks highly and provides a good example of explaining costs to customers • 100% of sewage treated in line with EA legislation 	<ul style="list-style-type: none"> • Innovative and sustainable with significant water reuse to ensure a reliable supply • Community engagement and enhancement of recreation • Significant focus on technology and innovation • Strong policy and smart roadmap to meet future needs

Appendix A

The following was used to provide a general introduction to interviewees and for the team to provide discussion prompts to the questions. This was provided to interviewees in advance.

Water industry reform and service delivery models questionnaire

WRc have been commissioned to respond to an emerging discussion about the effectiveness of water and wastewater industry and service models in England and Wales. We have been asked to consider ideas from across sectors, including globally, that could feed into a potential industry reform debate from the perspective of delivering sustainable water and wastewater with great customer service in England and Wales, now and in the future.

Rising household costs, greater awareness of pollution from storm overflows, the extended drought with hosepipe bans and outcry about leakage have fuelled the perception that the current industry water and wastewater service model is not delivering for customers and nature. In the longer-term challenges around climate change may further exacerbate the current issues.

We would like to have a conversation with you to understand your perspective about the way forward for improvements, and the value and potential for enhanced or alternative models for the provision of water and water services. We are engaging with a range of people to gather views on different models to support:

- Exploration of different potential water and wastewater service models and utility models that service the public, including the pros and cons of each one and relevant experiences from other sectors.
- Identification of potential improvements to the current regulated privatised monopoly water and wastewater service model.
- Understanding of how the transition to the recommended water and wastewater industry and service models could take place, including the cost of risks associated with transitioning.

There are several key areas of focus to consider contextually including:

- Service resilience (particularly in the face of long-term climate change challenges).
- Affordability and fairness of bills.
- Environmental protection to acceptable standards to the public and regulators.

- Transparency and accessibility of water industry (financial) performance, executive and shareholder remuneration, profits in the context of service delivery, and how priorities with respect to profitability juxtapose with affordable bills, customer service, customer protection and environmental resilience.
- The financeability position of utility models that service the public, to achieve the above in the short, medium, and longer term.

This is not a project linked to any existing inquiry or agenda. We are truly open to ideas and suggestions, both innovative and drawing parallels with industry models from across the world and in different sectors. We are seeking a range of views, experiences, knowledge, and insights to support this.

Terms used in the context of this questionnaire:

- *Water and wastewater industry and service models – referring to the companies and institutions that provide the holistic function (i.e., privatised regulated companies including regulatory oversight).*
- *Utility models that service the public – the bodies providing the delivery of services to customers within a particular model (e.g., a utility company).*
- *Governance arrangements – refers to the regulatory and policy oversight of water and wastewater service delivery (e.g., a regulatory body).*

Table 5 Questions asked during interviews

#	Question	Prompts (used as needed to facilitate discussion)
1	What do you think are the main issues facing the water and wastewater industry and service model in England and Wales now and in the future? Do you think service delivery is performing well – what aspects are working and what are not?	<p>This is a general warm up question to explore views and accepting that some of the international interviewees may have less detailed knowledge and may need us to prompt for analogies with their own experience.</p> <p>If necessary/appropriate, prompt by relating to industries likely to have similar models such as energy or telecoms.</p>
2	Reflecting on your current role and previous experiences, can you summarise and describe any challenges you might have observed, for example in other utilities, services, sectors or work	<p>Think about any similar challenges to those described in the introduction.</p> <p>Interested in ownership structures, governance and how this relates to key service delivery outcomes such as affordability, fairness of bills/charges, environmental</p>

	<p>you have been involved in, particularly in relation to where services are provided to the public? How were they managed?</p>	<p>outcomes, financeability, transparency, customer satisfaction.</p> <p>Also, may consider real versus perceived challenges, reputational issues, portrayal in the media etc.</p> <p>E.g., where a particular sector approach or model has been brought into question or challenged.</p>
3	<p>What is your opinion on the water and wastewater industry and service models, including utility models that service the public and associated governance arrangements, in England and Wales?</p>	<p>Do they see it as a success or not? Do they feel it is delivering for customers and the environment? How do they feel about the way it's being portrayed by the media? Is it delivering true value? Is it working or not?</p> <p>By water and wastewater industry and service models, we mean models such as the privatised, regulated model in England and Wales or the public and government owned model in Australia. Institutions are the bodies that deliver services within that model to customers e.g., utility companies, which may have different types of ownership. Governance arrangements refer to the regulatory and policy oversight of water and wastewater service delivery (e.g., regulators).</p>
4	<p>Do you feel the current water and wastewater service model for England and Wales is the best approach for delivering overall value to the public and nature in terms of water and wastewater services?</p>	<p>If not familiar with England and Wales – do they feel regulated private monopolies are the best approach for utility models that service the public, such as water?</p> <p>We are interested in their view in on ownership, institutional and governance arrangements.</p>
5	<p>Can you explain the rationale for your answer in Q4?</p>	<p>What made them answer as they did – have they seen other models, and do they have evidence that these could work better? If so, can they share their evidence? Is their view based on research, experience within different models, media portrayal or anecdotal evidence?</p>
6	<p>For utility models that service the public, what is your view in terms of ownership, what is your view in terms of ownership and whether it is preferable that this is public, private or a hybrid (e.g., Public Private Partnership)?</p>	<p>Check rating aligns to earlier answer for Q4.</p> <p>Factors to consider are the balance between affordability, trust, and service delivery.</p> <p>We are not advocating or leading people to any one structure or list of structures.</p>

		<p>We could also note that we are interested in implementable models, which may be hybrids of modifications rather than extreme ownership changes.</p> <p>Modifications to the status quo are also welcomed – for example independent customer representation on Boards.</p> <p>If the interviewee is really struggling to engage with the question, we may need to talk about current flavours of ownership model in the UK (e.g., as well as the privatised model in England & Wales, we have a nationalised model in Scotland, there are also some PPPs in places, private supplies exist that have limited regulation etc.). While noting that we want them to think for themselves about this using example from other sectors if they wish and our prompts are not meant to constrain them.</p>
7	What types of utility models that service the public do you feel work well, and what doesn't work as well and why?	<p>General question to identify ownership models that don't work, reasons and evidence as to why.</p> <p>Refer to the definition of a company ownership model in question 6 as required.</p>
8	To what extent do you feel that ownership influences utility models that service the public models in terms of the delivery of great service and overall value to society?	<p>Do they think ownership is a key factor? Or one of a combination of things (such as regulatory approach, transparency, competition and choice, communications and media etc.). Do they see a problem with ownership structures or a combination of wider issues?</p> <p>Have they experienced alternative approaches to financing large infrastructure or innovation schemes (e.g., termed DPC or SIPR in England and Wales water & wastewater, OFTO/CATO/SPV or CPM in UK energy, or a PPP/ BOT contract internationally). If so, what models were used, how effective were they and why?</p>
9	Can you suggest any service or utility models, drawing from your experience or knowledge, that you believe would deliver great service and overall value for water and wastewater industry service provision? Alternatively, what changes or reform might be made to the current model for water and sewerage service provision?	<p>This might be from other sectors (utility, retail or not), and can they share why they suggest this approach? Would they advocate wholesale change or gradual reform? This may be related to ownership models and structures or include wider options for reform.</p> <p>We also welcome global examples.</p> <p>This might include innovative approaches, unbundling, changes to the size and scale, style of regulation, separate</p>

		water and sewerage companies, customer involvement in management of services etc.
10	Have you experienced or are you aware of a change in utility or other service provision, including ownership models or service models in your area of work or elsewhere? If so, can you share any insights relating to this? What worked well and what didn't? What were the challenges or opportunities? How was the transition period managed?	What are the challenges or opportunities relating to transition to a new model? What worked well during the transition and what didn't?
11	In terms of great service delivery and overall value for society, consumers, and nature what, more broadly than the models we have discussed earlier, have you seen that works really well and why?	General exploration of where things have worked well, and why. This can be an opportunity to explore wider issues beyond just ownership, structure and governance and to explore cross sector learnings and opportunities.
12	Can you briefly describe your career and current role and experience?	