Water Discovery Challenge

An overview of the Water Sector and Innovation Opportunities

12 February 2026

Ofwat

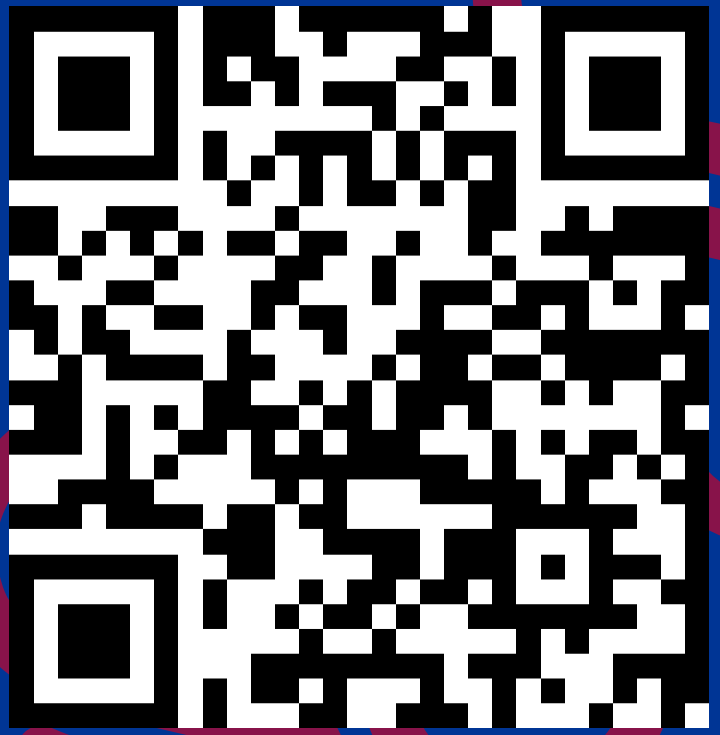
CHALLENGE WORKS by nesta

isle

ARUP

Q&A

Ask your questions on Slido
#DiscoverWater



Water Discovery Challenge

Today's speakers

Gabriella Frankl

CHALLENGE WORKS by nesta

Karyn Georges

isle

Hannah Muirhead

Ofwat

Chris Jones

NWG living water

Water Discovery Challenge

Aim of today's session

This webinar will provide an introduction to the structure of the water sector in the UK with a focus on England and Wales. It will also explore the key players and wider innovation ecosystem landscape as well as the current innovation challenges and opportunities.

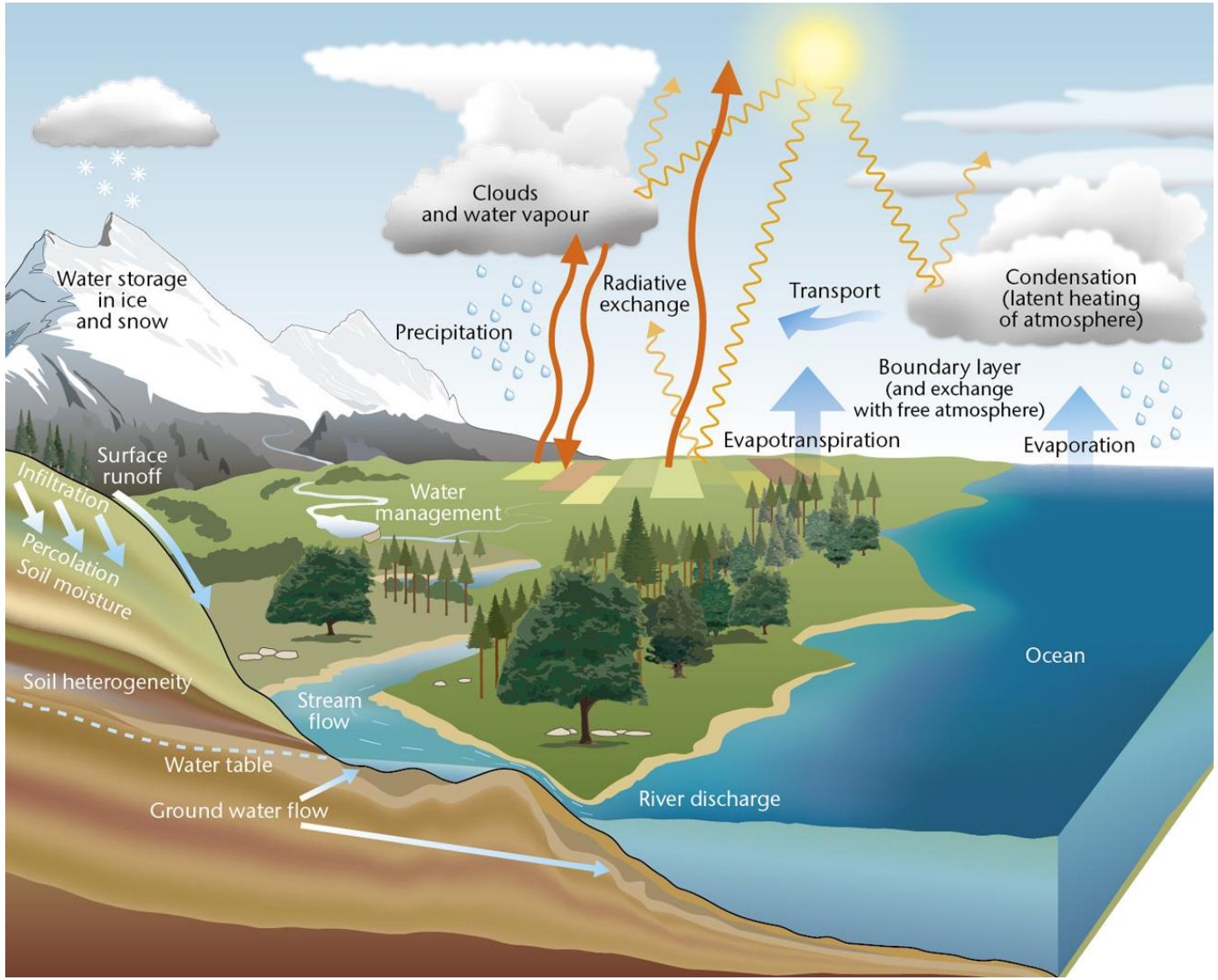
Water Discovery Challenge

Agenda

- The water sector
  - Water environment
  - Structure of the water sector
  - Regulation of the water sector
  - Wider ecosystem
- Challenges facing the sector
- Barriers to innovation and innovation opportunities
- Q&A

The Water Sector

The water environment



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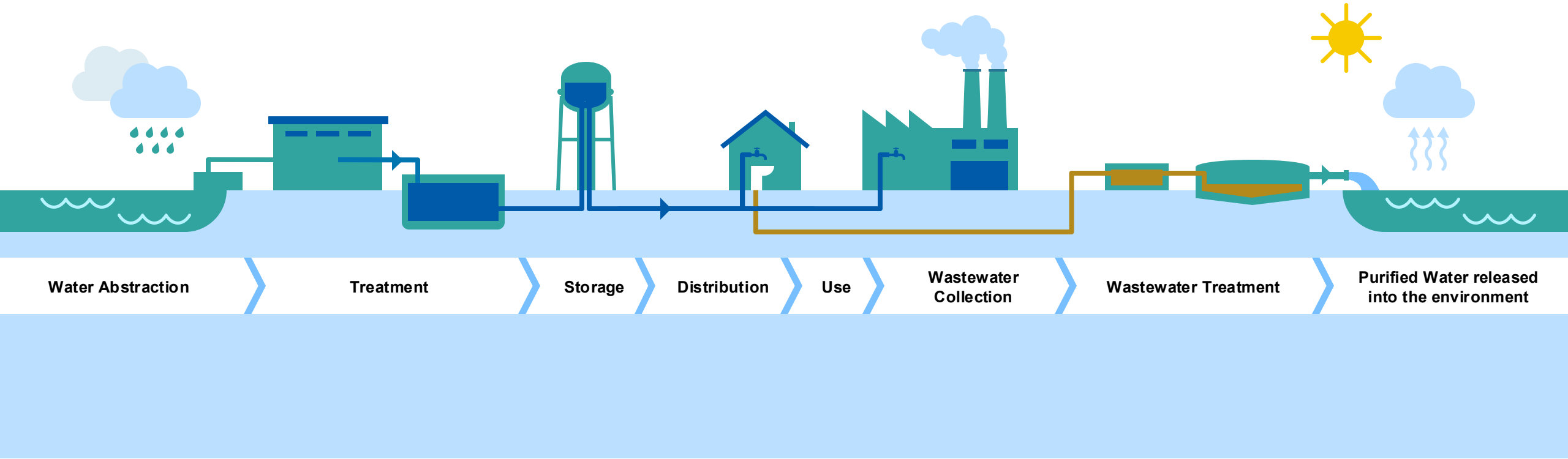
The water environment



Structure of the UK water sector

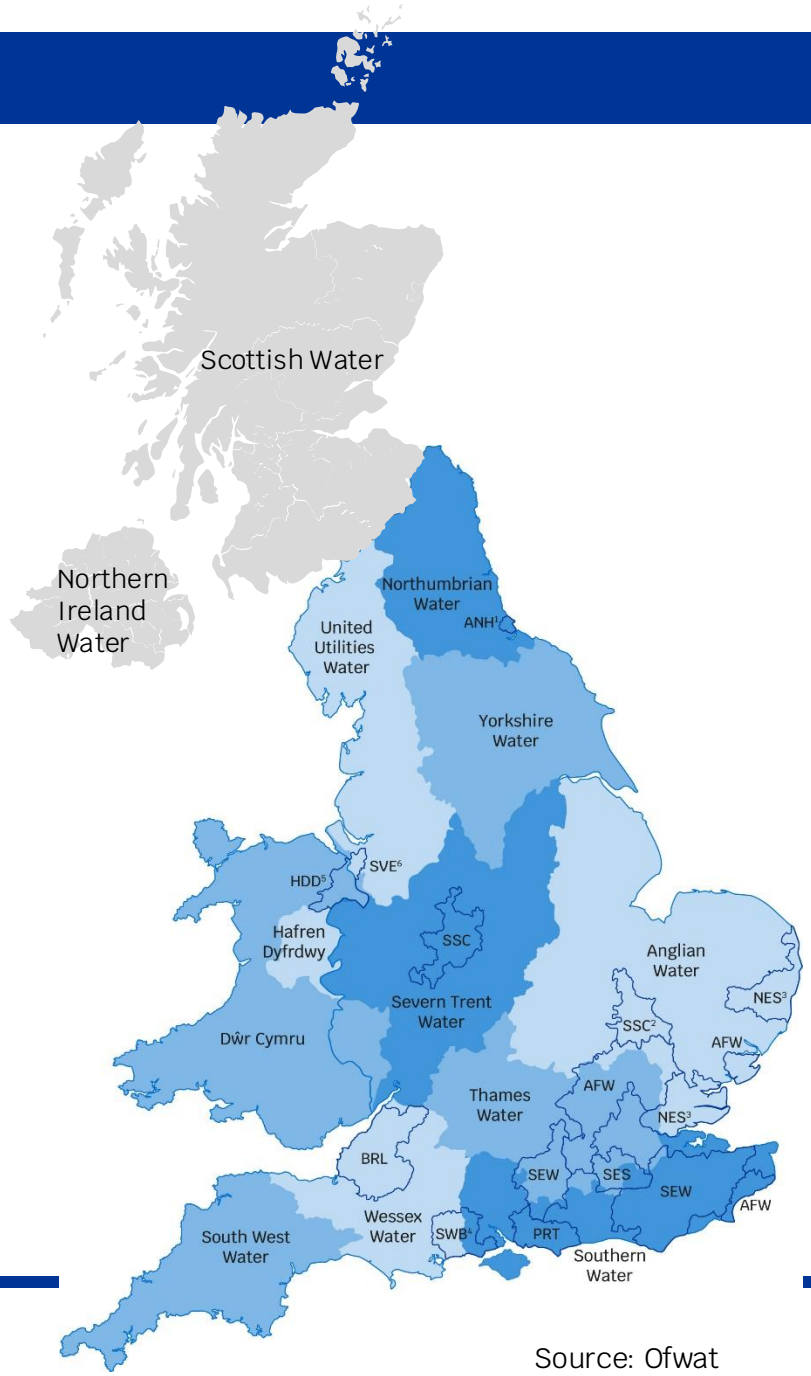
Water and Sewerage Companies (WaSCs)

- ANH Anglian Water
- WSH Dŵr Cymru
- HDD Hafren Dyfrdwy
- NES Northumbrian Water
- SVE Severn Trent Water
- SWB South West Water
- SRN Southern Water
- TMS Thames Water
- UUW United Utilities Water
- WSX Wessex Water
- YKY Yorkshire Water

Water Only Companies (WOCs)

- AFW Affinity Water
- BRL Bristol Water (merged with South West Water)
- PRT Portsmouth Water
- SEW South East Water
- SSC South Staffs Water
- SES Water

& New Appointments and Variations (NAVs)



These companies came together to develop the UK 2050 Water Innovation Strategy (also with Scottish Water and Northern Ireland Water and other organisations)

Submit your questions via Slido #DiscoverWater

Source: Ofwat

Current structure of the UK water sector

International influence/input

National Governance

Regional operators

* EU subject to change

Government and regulators

Department for Environment Food & Rural Affairs

Llywodraeth Cymru Welsh Government

Environmental Regulators

Environment Agency

Cyfoeth Naturiol Cymru Natural Resources Wales

Economic Regulator

Ofwat

Drinking Water Regulator

dwi

Statutory Body Consumer Representation

CCW The voice for water consumers Llais defnyddwyr dŵr

Regional Water & Wastewater Companies

Customers & Retailers (for non-household customers in England)

Future regulatory framework

On the 20th of January 2026, the Department for Environment, Food & Rural affairs (DEFRA) published a new paper. Key proposals are:

A single integrated water regulator

- Replaces Ofwat, the DWI and the water-related functions of the Environment Agency and Natural England
- Economic, environmental, public health and enforcement powers brought together under a single body

More proactive, supervisory regulation

- Stronger oversight of company performance and asset health
- Earlier intervention where risks emerge

Regional Water System Planning Authorities established

- Nine regional bodies responsible for strategic, long-term planning
- Focus on resilience, infrastructure investment and alignment with housing/growth priorities

Improved consumer protection

- A new independent water ombudsman with binding powers on complaint resolution

The Welsh Government released their paper on the 3rd February – proposing a distinct Welsh regulatory model, including:

A dedicated Welsh economic water regulator

- Designed specifically around Welsh policy priorities and sector structure
- Environmental regulation remains with Natural Resources Wales

Environmental and public health at core

- Driven by Wellbeing of Future Generations Act – the environment, public health and ecosystem resilience will be central outcomes for regulation

A Whole-system planning approach

- Integration of water governance with land use, agriculture and climate adaptation
- Emphasis on catchment-based solutions and upstream prevention

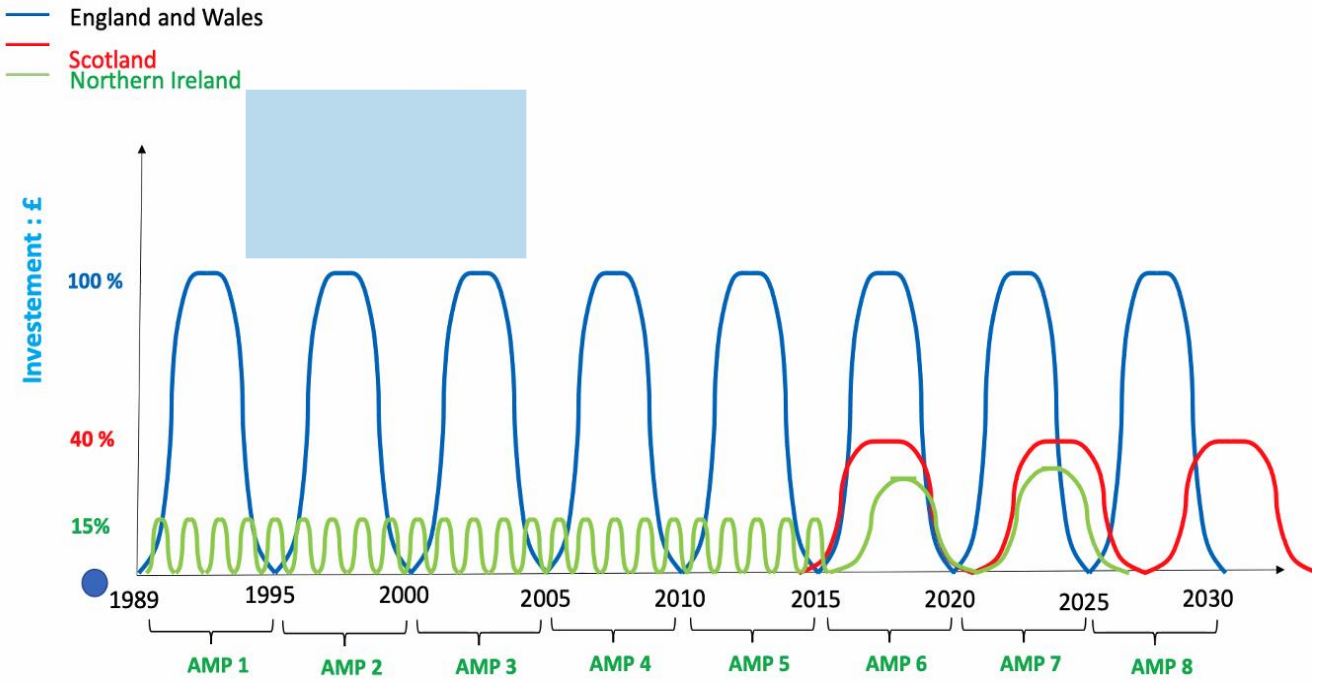
The regulatory cycle

PR & AMP

- Price Reviews (**PR**) followed by an Asset Management Period (**AMP**)
- Ofwat plays a vital role in overseeing the market

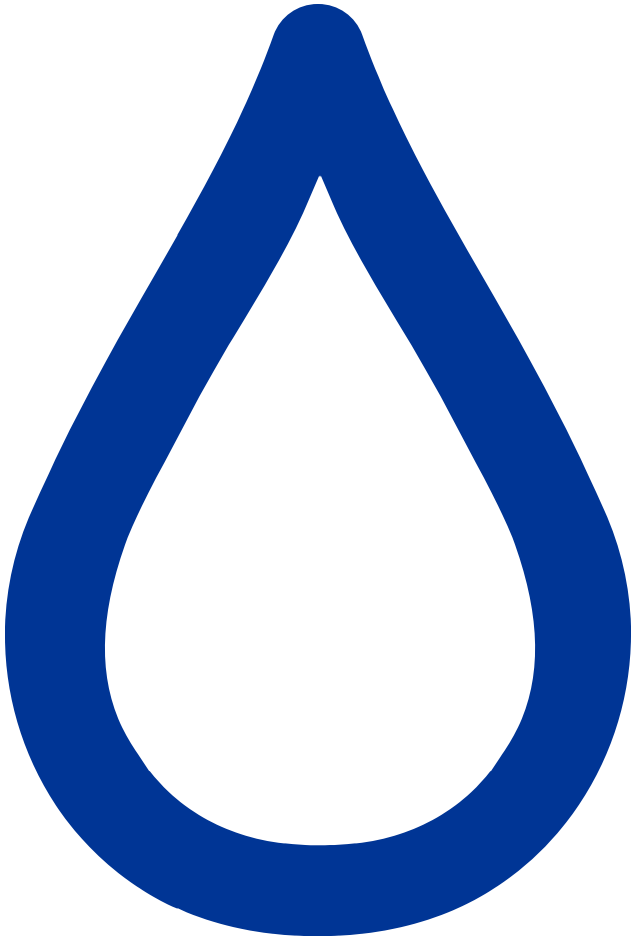
How?

- 5 Year Business Plans submitted to Ofwat for scrutiny and approval
- Ofwat issues draft and final determinations which set out a five-year price and service package



Wider ecosystem & Key actors

End Users	Customers, Businesses
Service Providers	Water companies, Retailers
Policy Authorities	Governments, Regulators, LEPs
Capital & Funding	Investors, Funding agencies
Research & Education	Universities, Water Research Hubs, Collaborative R&D initiatives
Media & Public Narrative	Media , Influencers

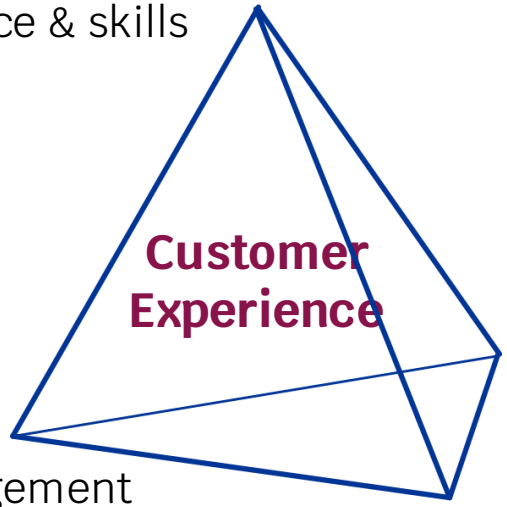


Current challenges facing the sector

Exciting time to be part of water sector transformation…

The water sector faces unprecedented challenges in the UK and globally.

Resilience
- Asset health & ageing
- System interdependencies
- Workforce & skills



Sustainability
- Catchment management
- Scaling nature-based solutions
- Water efficiency
- Circular economy & reuse
- Decarbonisation

Quality
- Drinking water quality
- River water quality
- Micropollutants
- Storm overflow management

Affordability

All are challenging conventional approaches to water management and the operations of Water Only and Water and Sewerage Companies.

Key challenge areas

Asset Resilience & Health

Ensuring water infrastructure remains reliable and adaptable through condition assessment, predictive maintenance and digital monitoring solutions.

Leakage Reduction

Applying advanced detection, pressure management and network optimisation to minimise losses and improve distribution system efficiency.

Water Quality & Micropollutants

Managing emerging contaminants to protect ecosystems and public health while meeting regulatory and environmental standards.

Storm Overflow Management

Reducing storm overflow events through network capacity upgrades, smart controls and integrated drainage to protect rivers and coastal waters.

Key challenge areas

Catchment Management & NbS Scaling

Using catchment-wide approaches and nature-based solutions to improve water quality, manage flooding and deliver environmental co-benefits.

Water Efficiency, Circular Economy & Reuse

Reducing system and customer demand through behaviour change.
Recovering water and energy from systems to minimise waste and improve efficiency.

Decarbonisation

Delivering operational and embodied carbon reductions via energy optimisation, renewables integration and low-carbon process innovation.

The water sector is changing but BAU is simply not enough

Then…

- Water sector criticised for speed at which innovation is developed and deployed.
- Difficult to get into the sector, as an innovator.
- Traditional industry priding itself as a silent-service, favouring reliability over experimentation.

Now…

Unprecedented collective energy and ambition to leverage innovation to support:

- Co-creation of practical, cost-effective solutions to current and future operational challenges.
- Development and deployment of technologies, skills and innovation culture that enables the water sector to rise to the challenges we face, as a civilization.

Where we need to go…

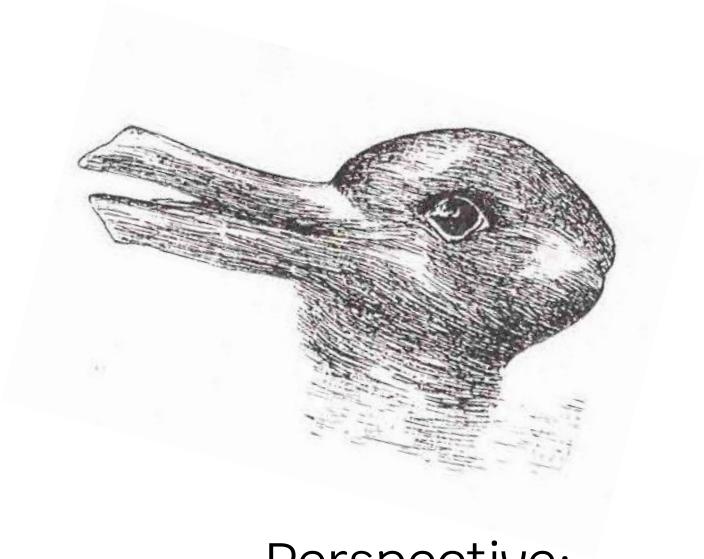
- Resilience
- Digitalisation
- Net Zero
- Systems Thinking

Barriers to innovation

What does good look like?

Value proposition:
explainable and testable

Systems thinking:
nodes, edges and boundaries



Perspective:
what do you see that we don't?

Why do promising innovations stall?

The failure of water innovations is **often not due to flaws in the solution** itself. More often, the barriers lie in how the market perceives, adopts and integrates these solutions. The real challenge is translating an idea into something that utilities and regulators **trust enough to implement at scale.**

Technology – market mismatch

- Innovators will design around the technology, not the real problem.
    - E.g.: solutions that optimise niche processes but don't solve urgent, system-level challenges.
- Innovation without a clear demand stalls.

Risk-averse sector

Why utilities move slowly:

- Reliability is prioritised over novelty.
- Procurement processes in the sector are lengthy.
- Innovations often require approvals from several decision-makers.

Hidden barriers

- Lack of demonstrable proof at scale.
- Early grants get ideas started; commercial investment is harder to secure.
- Compliance requirements delay the pace of adoption.
- Misaligned incentives between stakeholders.

Lessons for innovators

- Innovators should **start with the problem rather than the technology**, ensuring their solutions directly address urgent sector needs.
- **Building credibility** early through pilots, transparent performance data and trusted partnerships is essential for gaining trust.
- Successful innovations **plan carefully for adoption pathways**, including understanding procurement cycles and regulatory approvals.
- Designing solutions that **integrate seamlessly with existing infrastructure**, rather than requiring disruptive change, greatly increases adoption potential.

Lessons for innovators

Collaboration is key

- Progress depends on collaboration between innovators, utilities, regulators, investors and communities.
- Helps spread both the risks and the benefits of adoption, making it easier for utilities to take the leap.
- Partnerships where utilities provide testbeds, regulators offer supportive frameworks and investors co-fund pilots often create the strongest pathway to scale.

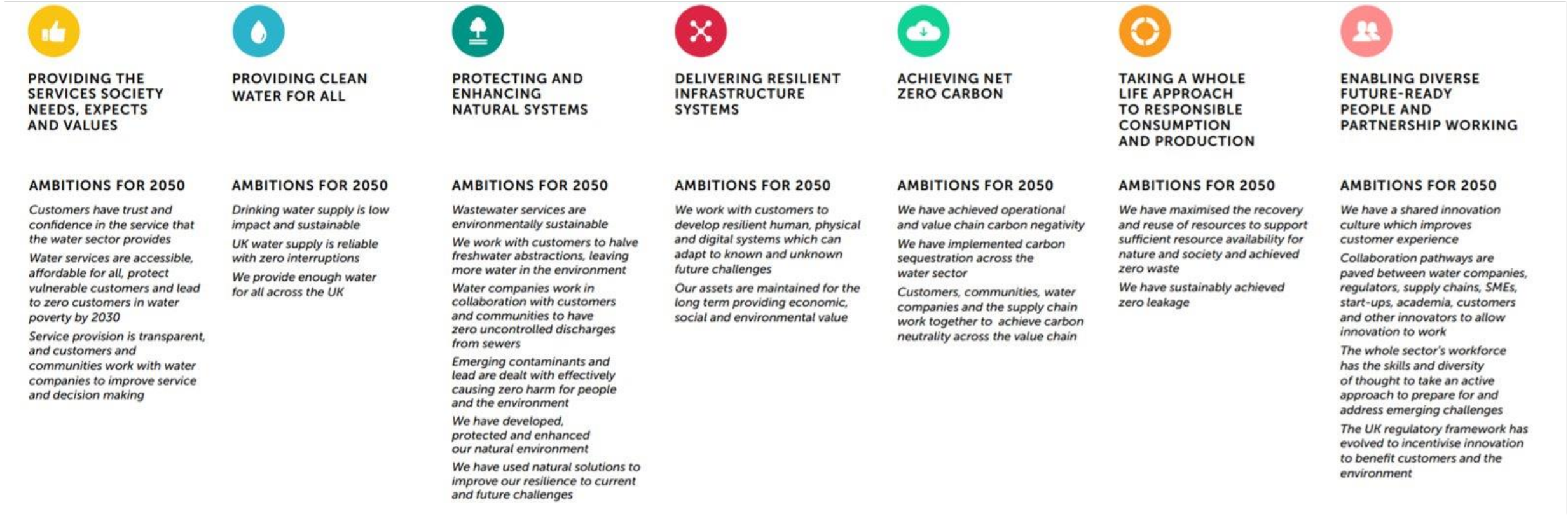
Shaping a compelling case:

- To succeed, innovators must move beyond efficiency and cost as their only selling points.
- The strongest cases emphasise resilience, ESG outcomes, compliances assurance and long-term operational savings.

Innovation opportunities

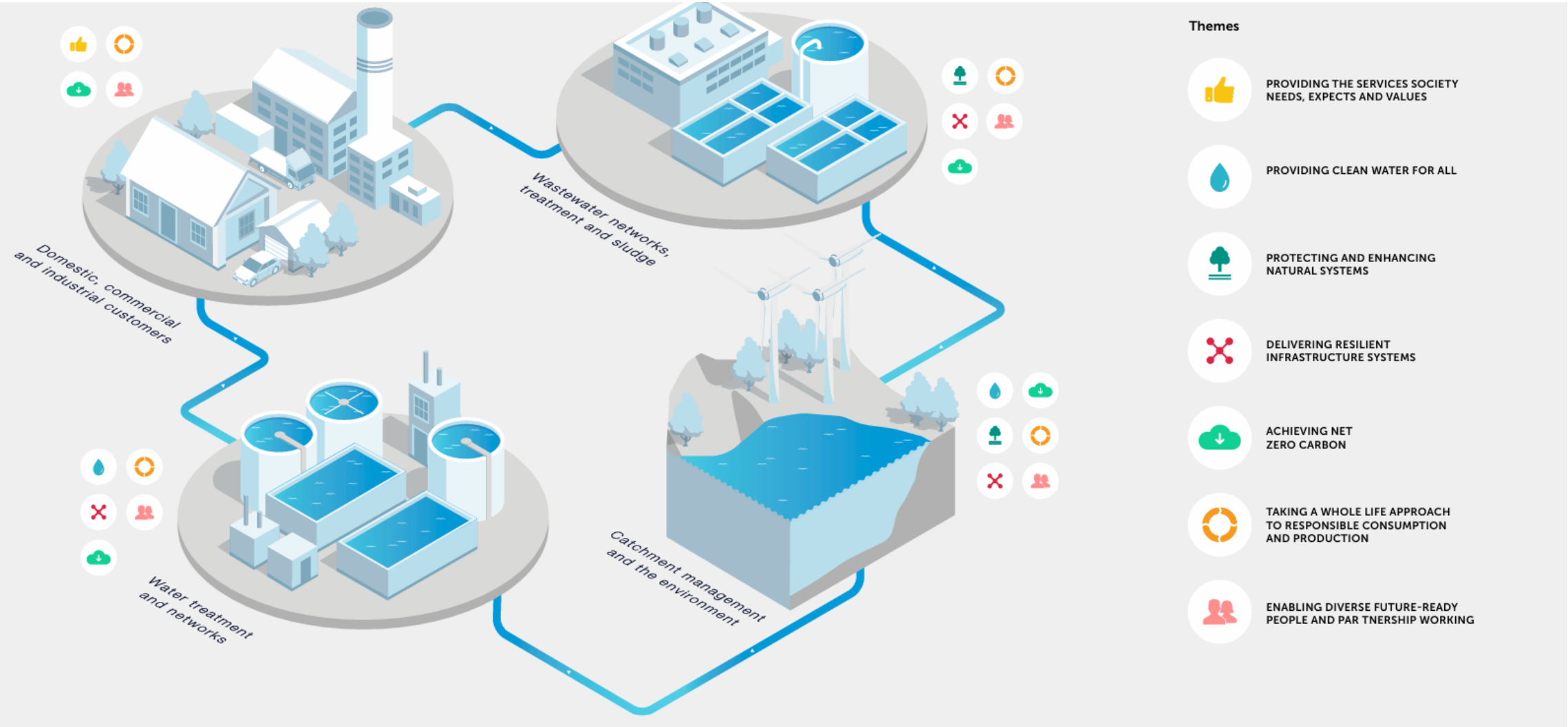
UK Water Innovation Strategy 2050

The UK 2050 Water Innovation outlines a UK wide strategy for transformational innovation. It sets out 7 key themes, that have been identified as the focuses for innovation.



UK 2050 – Water Innovation Strategy

Innovation themes across the water cycle



UK 2050 – Water Innovation Strategy

Innovation opportunities

In line with the challenges outlined in slides 16 & 17,some potential innovation opportunities are highlighted below.

This is not an exhaustive list but we have listed some example solutions below...

- Can monitor buried, inaccessible assets without excavation
- Can create autonomous, smart overflow networks
- Improve access to low-cost methods for proactive monitoring

- Help measure the multi-benefit value of NbS
- Encourage water conservation and/or grey water use
- Capture chemical energy from wastewater

- Help water companies make effective data driven investment decisions
- Optimise energy use of pumps/blowers in real time
- Can selectively remove PFAS, microplastics and micropollutants

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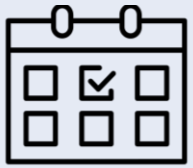
What's Next?



Entry period closes 8 April 2026 at 1pm (BST)

Download the Innovator Handbook

WetNetwork event on 26 February in London to hear from Discovery 1 Innovators – register

Entry clinic 18 March

Q&A

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