



Future-proofing F&B

Tackling rising costs and water scarcity

JONATHAN MANN, BUSINESS DEVELOPMENT MANAGER

MATTHEW MOORE, ANGLIAN WATER STRATEGIC FLOOD AND PARTNERSHIP MANAGER

About Alpheus

For over 30 years the Alpheus team have been helping customers to deliver operational efficiencies, extend asset lifecycle, achieve compliance and increase resource reuse for a sustainable future.

Our Expertise

WATER TREATMENT SYSTEMS

WASTEWATER TREATMENT

ANAEROBIC DIGESTION (AD)

WATER RECYCLING & REUSE

Our Services

OPERATIONS & MAINTENANCE

ENGINEERING & DESIGN

CONSTRUCTION & DELIVERY

LIQUID WASTE RECYCLING



Overview

1. Overview of water challenges in the UK
2. How these challenges will affect the F&B Industry
3. Innovations to address these issues, including examples
4. Actions, including examples
5. Q&A



Poll

What water challenges are you facing?

- Increasing cost of supply
- Water supply restrictions
- Increasing discharge costs
- Excess stormwater
- Regulatory pressures

Water challenges in the UK

Excess stormwater and sewer overflow

Rising water supply costs

Regulatory updates to ensure the protection of the environment.

Water scarcity and supply challenges

THE EFFECT ON INDUSTRY

Disruption to plant performance through excess flow, or changes in plant biology.

Excess stormwater can present a **hazard on site**.

Excess stormwater can lead to **increased tanking costs**.

Increasing the cost of operations and the costs associated with **expansion plans**.

Businesses have seen an **average increase of 9% across the UK this year, and this is set to rise** further as heavy investment is made in infrastructure.

Proposed changes from the EA will **increase discharge costs by up to 15% and permit costs by up to 50%**.

As regulations become stricter, **companies will invest more money** to improve the quality of water to keep costs manageable.

Expansion and growth plans are being hampered as more water companies restrict **new water supply for industrial customers**.

For some companies, this is **causing delays** and leading to **significant cost increases** for planned expansion projects.

Riding the waves

Harnessing nature's resilience

A journey through natural flood management



Matt Moore MIWater

Strategic Flood & Partnership Manager

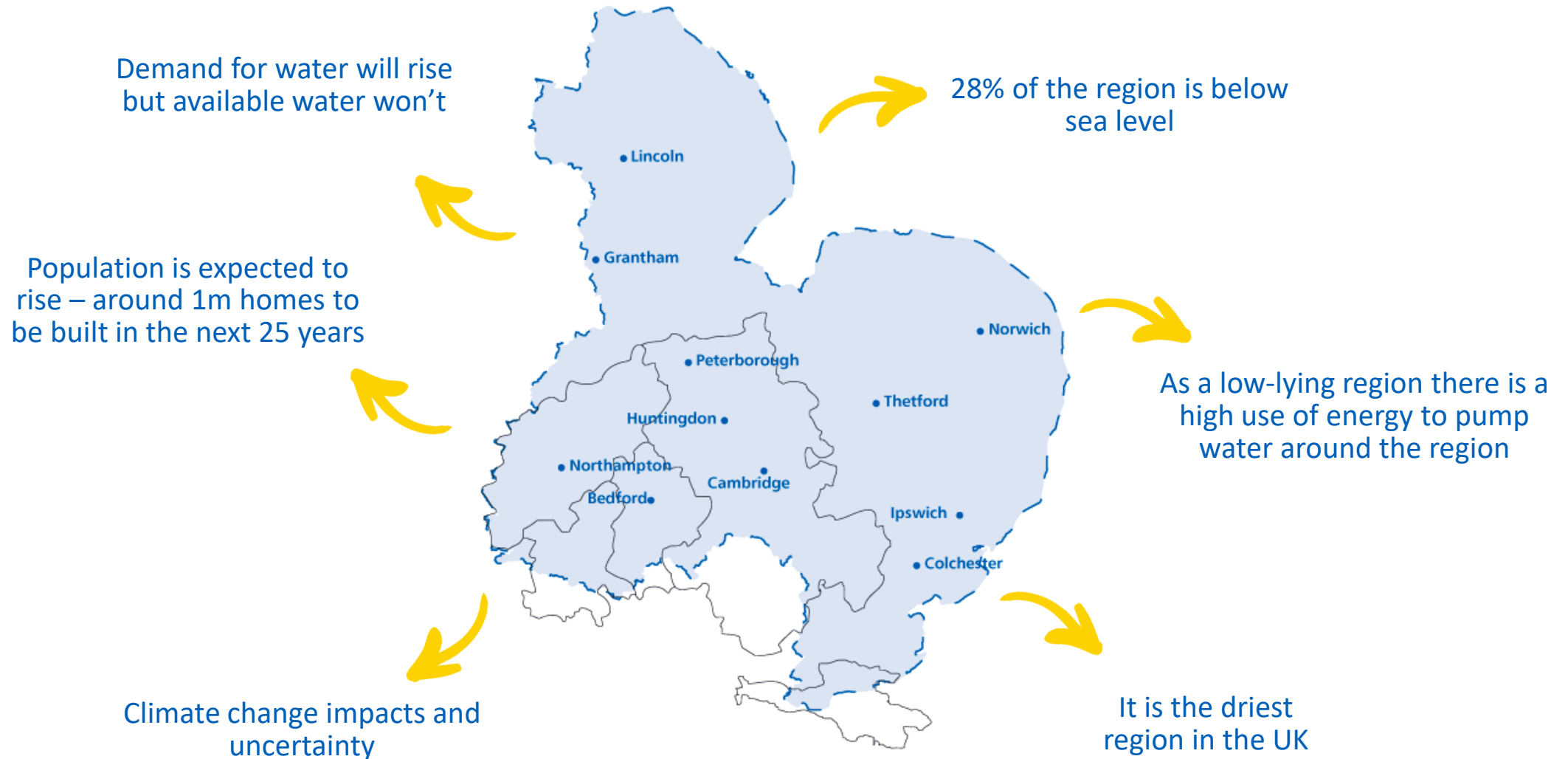
Quality & Environment

Anglian Water Services Ltd

LinkedIn: [AnglianWater](#) | [MattMWater](#)



Our vulnerable region



Why do we struggle when it rains?

Over time, our addition of impermeable areas due to rapid development and growth has interfered with nature's natural process of dealing with rain



CSO spills which cause environmental impact



Internal and external flooding which causes devastation and destruction

Fresh water goes to waste

Wasted energy, sending surface water into the treatment process

IMPERMEABLE VS PERMEABLE



Impermeable material does not allow water to pass through it. Permeable material does.

Setting The Scene – what can be done



“ ”

Nature is pleased with simplicity

Sir Isaac Newton



GREEN VS GREY



Nature-based solutions (NbS) in flood risk management refer to the use of natural processes and ecosystems to reduce the risk and impact of flooding. This approach leverages natural features and processes to provide sustainable and cost-effective flood protection while delivering multiple co-benefits for biodiversity, climate resilience, and human well-being

Solution 1 – Rainwater Planters



Solution 2 – Rain Gardens



Solution 3 – Tree pits and Swales



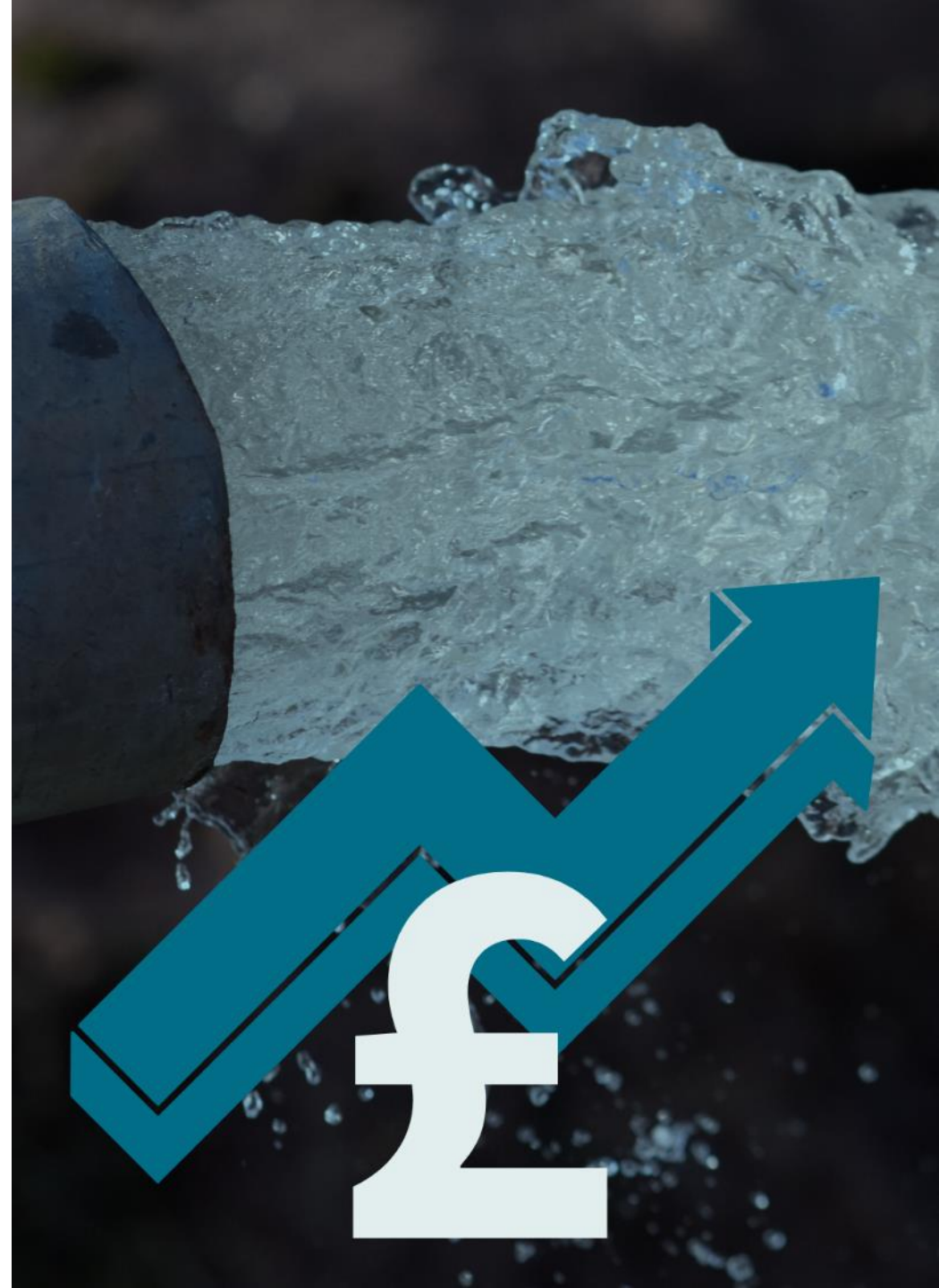
Water Management Costs

- ! Water rates for businesses went up by 9% on average in April.
- ! Trade effluent costs are set to increase by up to 15%, and permit application charges by 50%*

Further rises are likely due to:

- STRICTER ENVIRONMENTAL & WATER QUALITY REGULATIONS
- INFRASTRUCTURE UPGRADES *TO MODERNISE INFRASTRUCTURE, PROCESS INCREASED STORMWATER & MEET SUSTAINABILITY REQUIREMENTS.*
- WATER AVAILABILITY CHALLENGES DUE TO CLIMATE CHANGE
- INFLATION AND ECONOMIC PRESSURES
- INCREASED MONITORING AND COMPLIANCE REQUIREMENTS

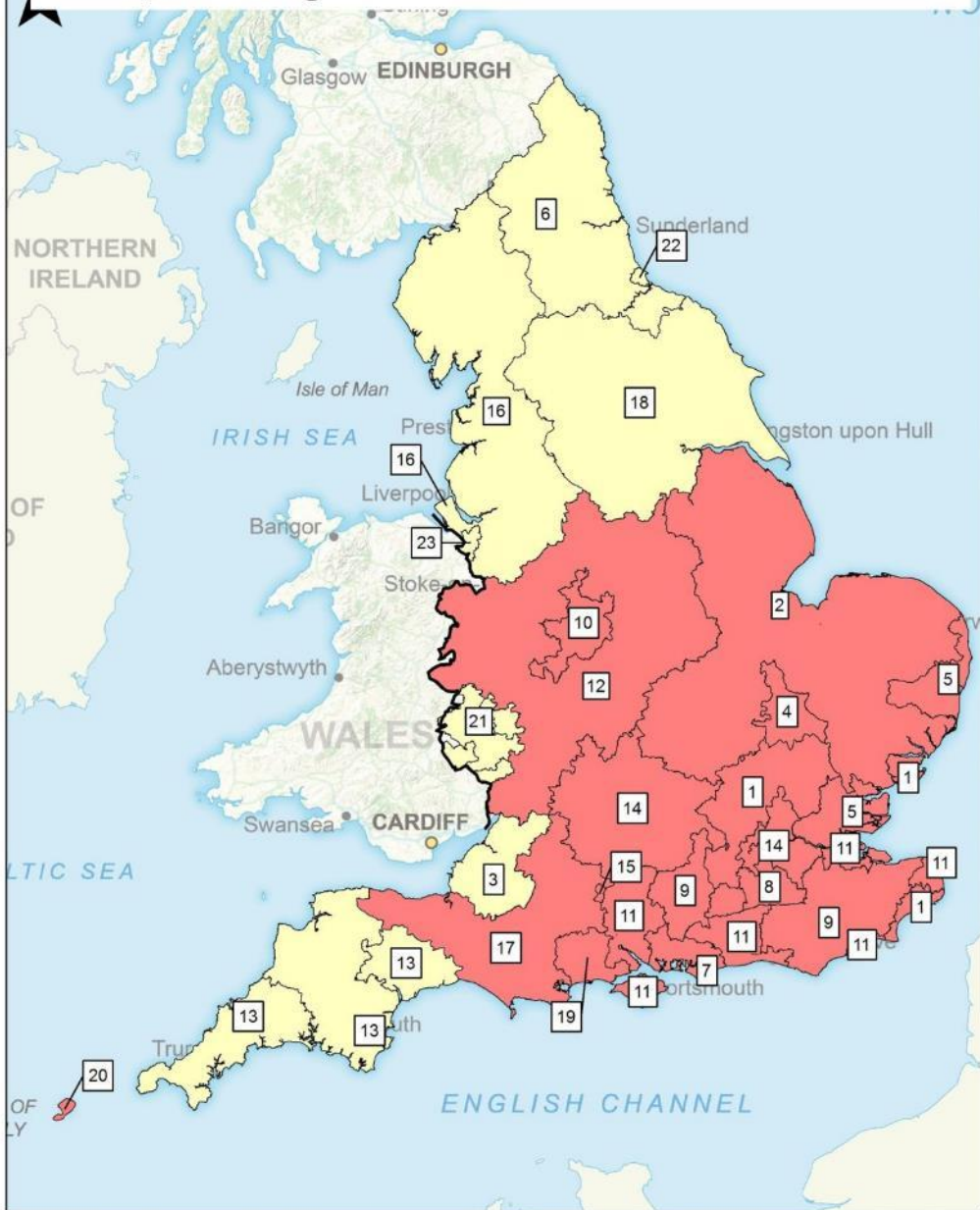
* [Based on proposed changes by the Environment Agency](#)



EA Map showing results of water stress classification

Future Supply Challenges for Industry

- 40% of UK regions are expected to be severely water-stressed by 2030, predicted to rise to 70% by 2040.
- In the AW region, by 2050 there will be nearly 40% less water to supply customers due to increased demand, climate change and a reduction in abstraction licences by the EA.
- Water companies have a legal obligation to ensure the security of supply for all domestic customers. **However, there is no obligation to ensure the security of supply for non-household customers.**



Water Stress Map	Notes
England Wales	1. Affinity Water
Boundary	2. Anglian Water
Not Serious	3. Bristol Water
Serious	4. Cambridge Water
	5. Essex and Suffolk
	6. Northumbrian Water
	7. Portsmouth Water
	8. Sutton and East Surrey
	9. South East Water
	10. South Staffordshire
	11. Southern Water
	12. Severn Trent Water
	13. South West Water
	14. Thames Water
	15. Veolia Water
	16. United Utilities
	17. Wessex Water
	18. Yorkshire Water
	19. Bournemouth WRZ (South West Water)
	20. Isles of Scilly WRZ (South West Water)
	21. DCWW
	22. Hartlepool WRZ (Anglian Water)
	23. Chester WRZ (Severn Trent Water)

Challenges of Water Supply

- Demand for water to achieve decarbonisation goals is unprecedented.
- Some water companies are unable to approve new connection requests from Industry.
- In the Humber region over FY2023/24 seven requests were made for new connections of which 6 were rejected.

Connections are typically requested with a short timescale with the assumption that water is available.

Company	Requested (MI/d)	Approved (MI/d)
A	5.2	/
B	4.4	3.5
C	13.2	/
D	0.7	/
E	6.1	/
F	1.0	/
G	1.6	/
TOTAL	32.2	3.5

The impact on industry

Disrupts growth and planning



Increased project delivery costs



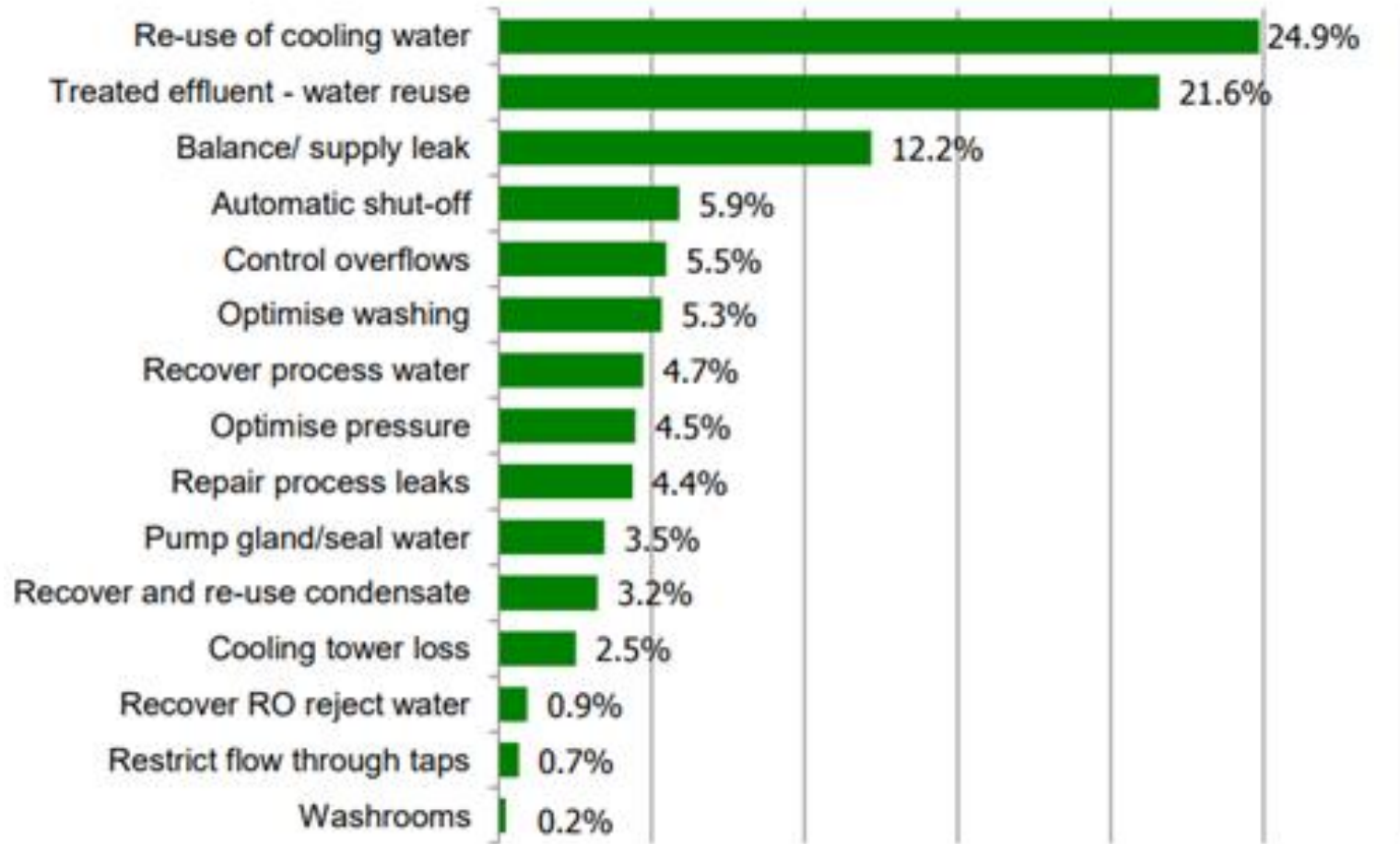
Delays in project delivery



Cancellation of projects



Water saving opportunities



From [Environment Agency Food and Drink manufacturing water demand projections to 2050 Report \(Fig. 11, p30\)](#)

Water Recycling Technology

There are a range of options available depending on the ultimate use of the water – including fit for consumption and very high purity for industrial uses:

- **Membrane Filtration:** Ultrafiltration and Nanofiltration removes particles and contaminants, producing high-quality water for various non-potable and potable uses.
- **Ultraviolet (UV) Disinfection:** Exposes water to UV light to destroy microorganisms and ensure pathogen-free water.
- **Ozone Treatment:** Uses ozone to disinfect water and reduce chemical contaminants.
- **Biological Treatment:** Employs microbial activity to break down organic matter in wastewater.
- **Electro-deionization (EDI):** Combines ion exchange and electrolysis to produce high-purity water.
- **Activated Carbon Filtration:** Removes organic compounds and chlorine, improving water taste and safety.

Water recycling solutions

Fresh Prepared Meals
Supplier – 75% of plants water
needs served from recycled
water



Centrica use of treated
effluent from the Flag Fen
treatment plant



New client plans to treat and
reuse effluent from the
adjacent treatment plant



Choosing the right solution

Every site and process is unique.

An experienced provider will be able to identify and design the most cost-effective and reliable solution to meet your specific goals.

Front-end studies for options identify the most effective solution. Designs are based on delivering long-term value.

As part of the Anglian Water Group (AWG) we can help businesses in the region develop solutions to meet future needs alongside (AWG).

Food (or Drink) for thought!



Poll

What are your own thoughts about recycled treated effluent in-product?

- This should never be considered.
- I'm on the fence.
- I would support this, but customers aren't ready.
- This will become necessary in the future.
- We're already doing this.

Alpheus
part of the Anglian Water Group

Questions?

Unlock Hidden Savings

Water and Wastewater Treatment Plants



Get in touch

JONATHAN MANN

ALPHEUS BUSINESS DEVELOPMENT
MANAGER



jmann@alpheus.co.uk



07964 207338



[Alpheus | JonathanMann](#)



alpheus.co.uk

MATTHEW MOORE

ANGLIAN WATER STRATEGIC FLOOD &
PARTNERSHIP MANAGER



mmoore3@anglianwater.co.uk



[AnglianWater | MattMWater](#)



anglianwater.co.uk