



# REPORT FOR WATER UK, WORKING IN COLLABORATION WITH BRITISH WATER, ON AMP8 DELIVERABILITY

Executive Summary – Final  
Report (Overview of the analysis  
through Phases 1-4)

2023 (v1.0), prepared by Stantec



# Overview of project:

**Phase 1:  
Data collection**

**Phase 2:  
Understanding the  
potential scale of the  
AMP8 investment  
programme**

**Phase 3:  
Assess key challenges  
to the water sector  
supply chain's ability to  
deliver AMP8 investment  
programme**

**Phase 4:  
Understanding the  
external factors that  
may have a major  
impact on deliverability**

**Complete**



# Phase 1: How big is AMP8?

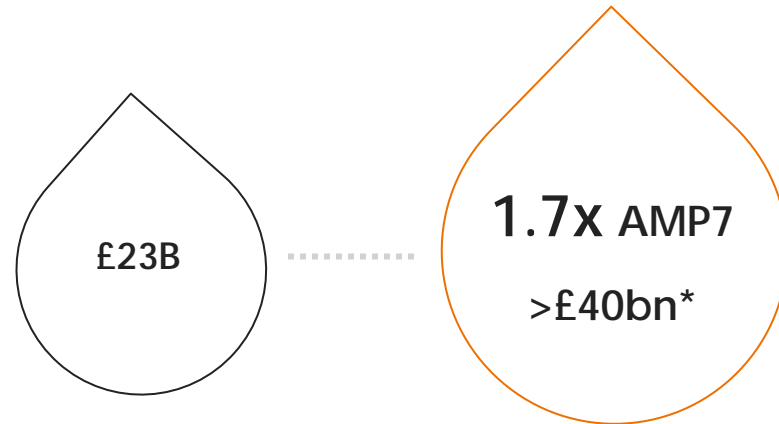


# How big could the AMP8 planned capital expenditure be compared to AMP7 for the industry?

Comparison of the capital expenditure for AMP7 vs AMP8 in 2017-18 prices

AMP7 AMP8

Capital Expenditure



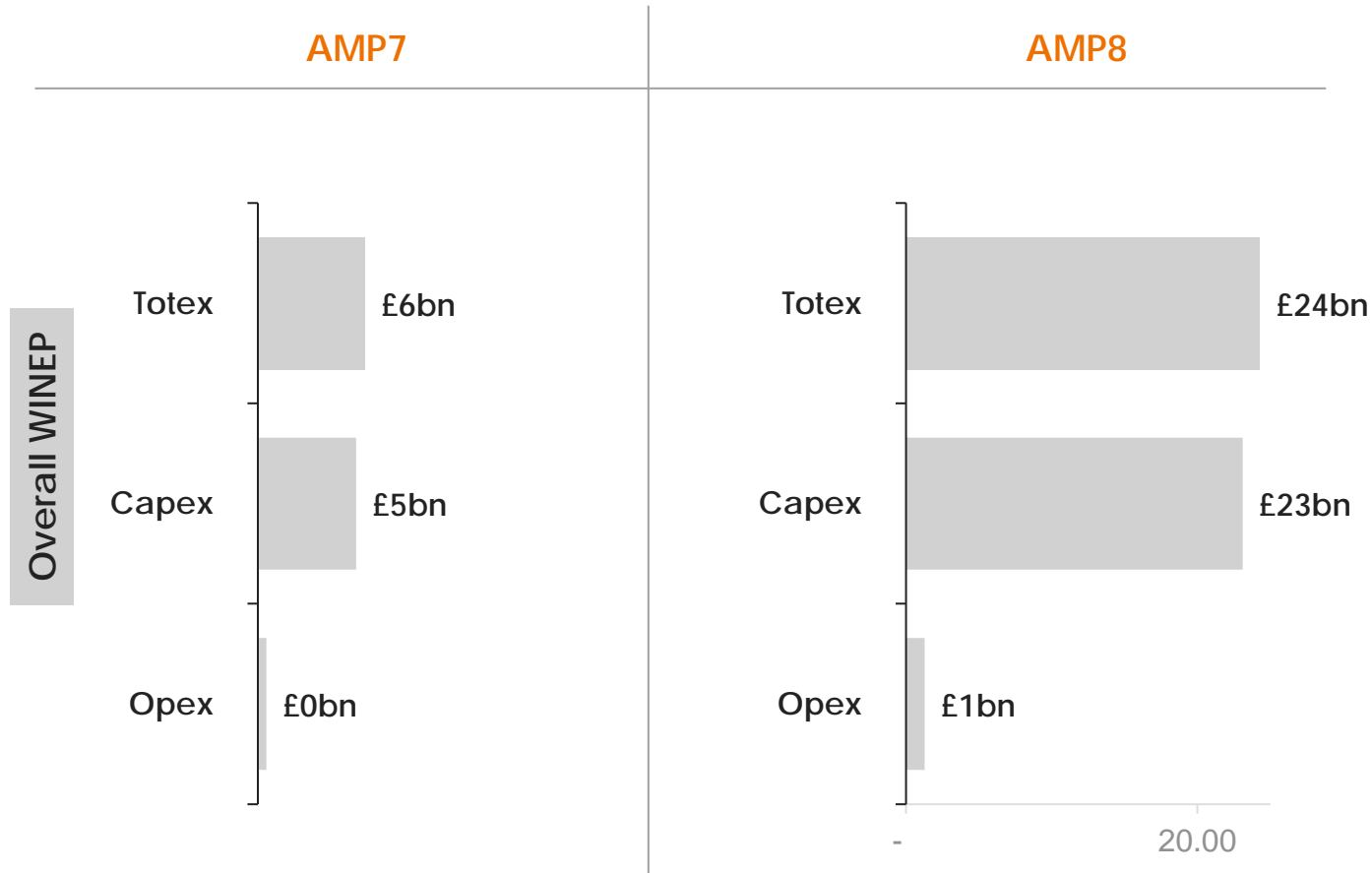
## KEY INSIGHTS

- Expenditure at 2017-18 prices
- This includes the allowance for the non-participating WOCs and an allowance for one non-participating WaSC.

\*Note: This methodology uses AMP7 non-WINEP CAPEX as a representative sum for AMP8 non-WINEP Capex. AMP8 WINEP CAPEX has been deflated from 2020-21 prices to 2017-18 prices to obtain an overall approximate value for AMP8 CAPEX programme that is directly comparable to AMP7 and its potential deliverability.



# How does WINEP planned expenditure look in AMP8 vs AMP7 at 2017-18 prices?



## KEY INSIGHTS

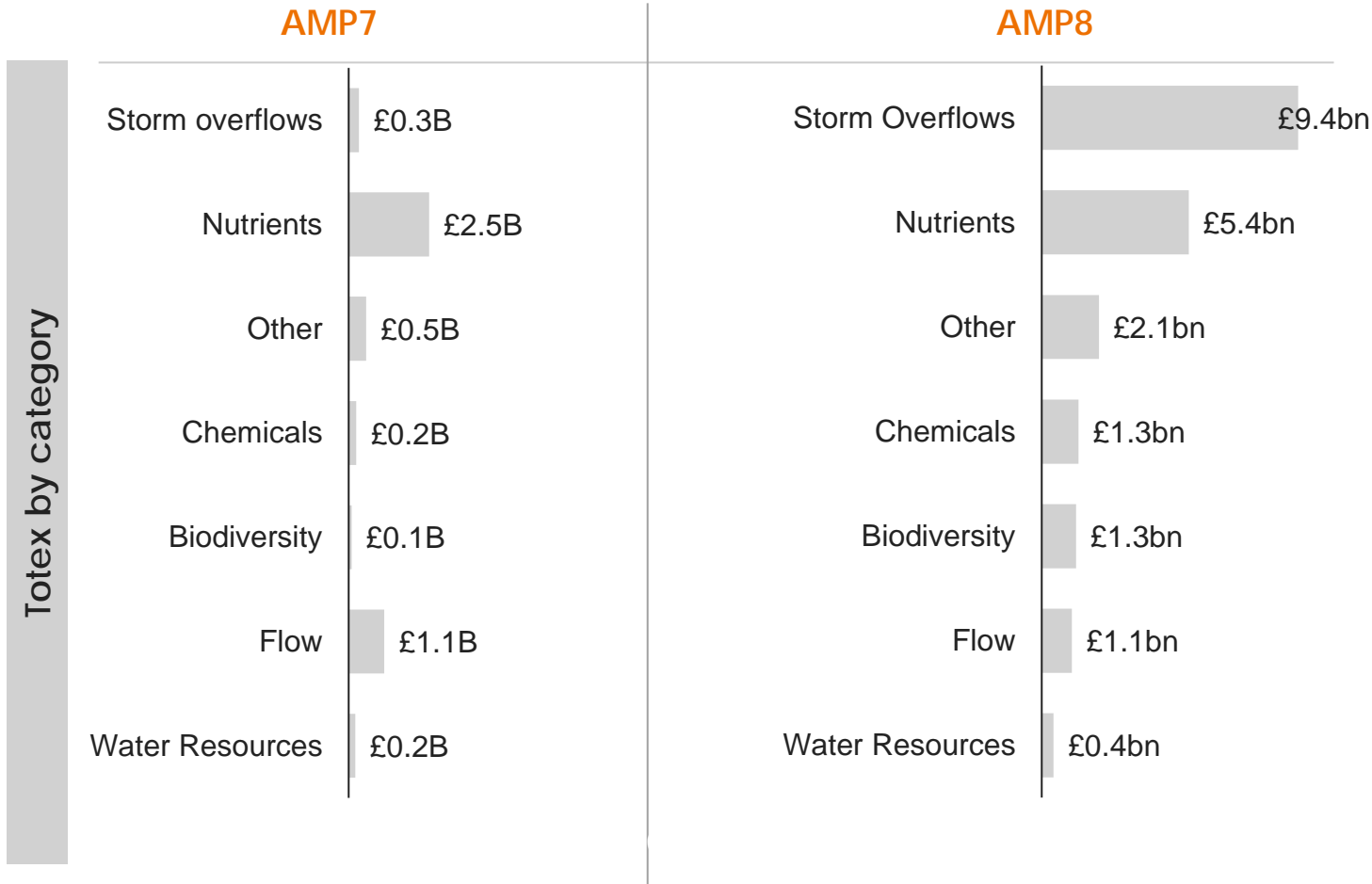
- The AMP7 expenditure analysis values are all at 2017/18 prices
- Across the 9 WaSCs, WINEP related planned expenditure is c. £22B which is about four times the planned expenditure in AMP7 of c. £5bn
- Across the two AMPs, operational expenditure is making up <10% of totex with the bulk of the spend in capex
- The focus on pollution incidents and sewer overflows has led to a stronger emphasis on CSO as the primary environmental area which is evident from the multi-fold increase in planned expenditure to this category
- Biodiversity and nature-based solutions have become a major focus area with the planned expenditure now reaching a billion pounds for AMP8

\*Includes the planned expenditure for one non-participating WaSC for AMP7 and AMP8 (estimated as average across the WaSCs); Charts scaled to £23B for comparability



# Where might the WINEP planned expenditure be spent in AMP8 vs AMP7 at 2017-18 prices?

AMP7 VS AMP8



## KEY INSIGHTS

- The AMP7 expenditure analysis values are all at 2017/18 prices
- Across the 9 WaSCs, WINEP related planned expenditure is c. £22bn which is about four times the planned expenditure in AMP7 of c. £5bn
- Across the two AMPs, operational expenditure is making up <10% of totex with the bulk of the spend in capex
- The focus on pollution incidents and sewer overflows has led to a stronger emphasis on CSO as the primary environmental area which is evident from the multi-fold increase in planned expenditure to this category
- Biodiversity and nature-based solutions have become a major focus area with the planned expenditure now reaching a billion pounds for AMP8

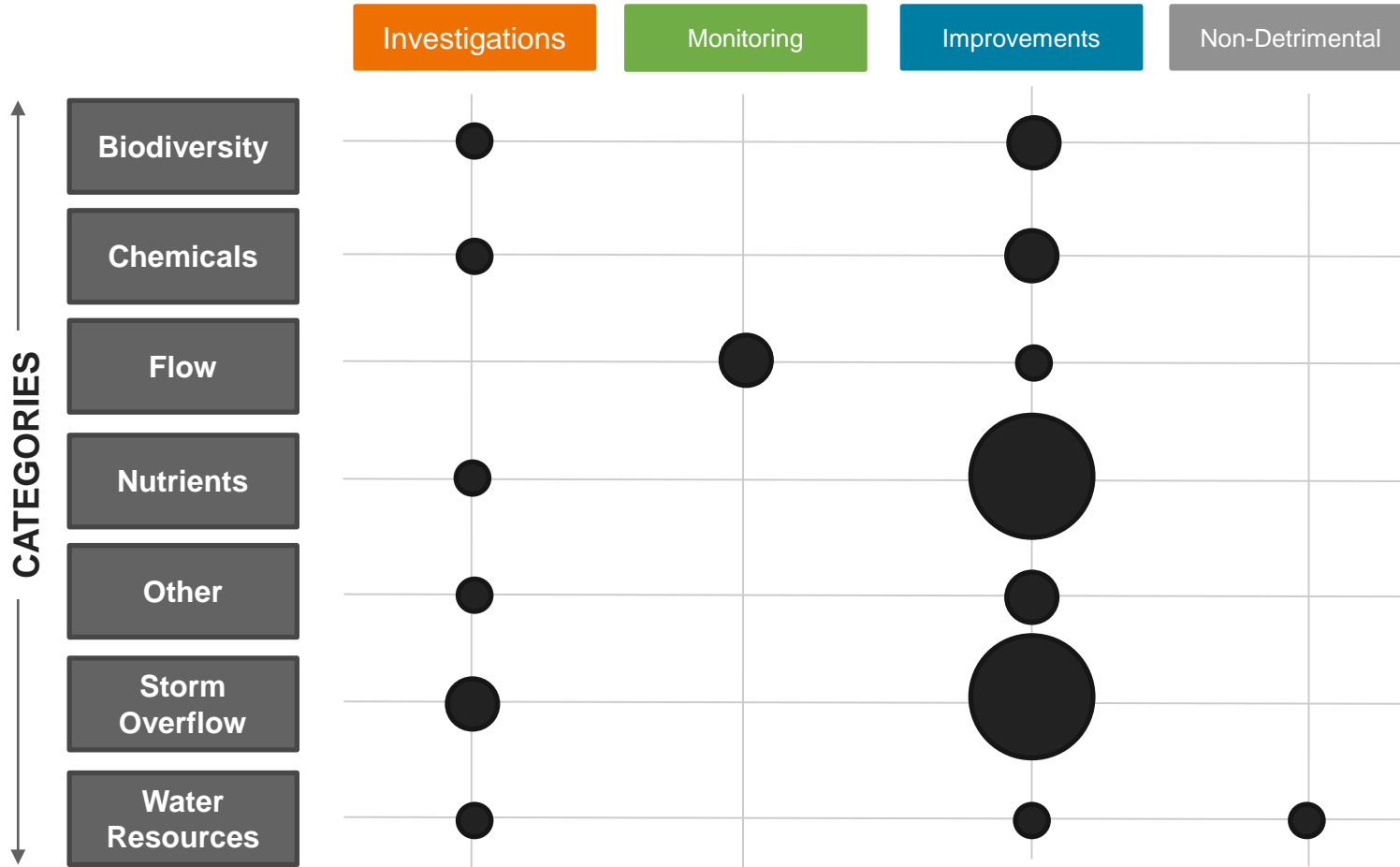
\*The above table on planned expenditure per category excludes the values for 'one non-participating WaSC' from both AMP7 and AMP8 estimates for comparability \*\*Charts scaled to £10B max for comparability



## Phase 2: Which are the areas of stress and reasons?

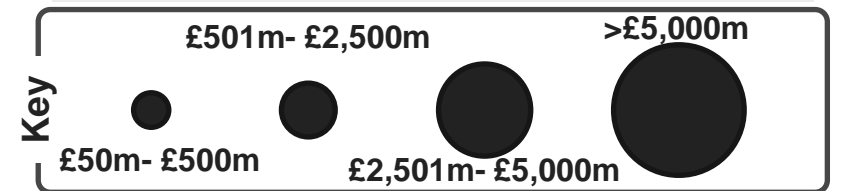


# How is capex is spread out per WINEP action for each category?



## KEY INSIGHTS

- Storm overflows have the greatest planned expenditure on investigations and improvements.
- Biodiversity has Investigations with planned expenditure at c. 50% of Improvements
- Water resources, has Improvements with planned expenditure at c. 50% of Investigations
- ‘Flow’ does not have any allowance for ‘investigations’ reflecting it as a well-established part of the AMP cycle and it’s continuity in scale and nature from AMP7
- The ‘Investigations’ WINEP actions has a planned capital expenditure of 5%-25% of the planned capital expenditure per category







# AMP8 Deliverability: Scale of challenge across

————— Perceived Deliverability Challenge —————>

|  | Low   | Medium   | High   |
|--|---|--|--|
| <b>Improvement delivery risk? [newer solutions, not tried and tested, higher risk]</b> | <ul style="list-style-type: none"> <li>- Marine Conservation Zones Investigations</li> <li>- WFD Groundwater Investigation</li> <li>- Drinking Water Protected Areas inv</li> <li>- Shellfish Water Investigations</li> <li>- Microplastics investigations</li> <li>- Drinking Water Protected Areas imp</li> <li>- Shellfish Water Improvements</li> <li>- UWWTD Improvements Increasing Flow Passed Forward</li> <li>- UWWTD Improvements Increasing storm tank capacity</li> <li>- UWWTD Monitoring of emergency overflow operation on network SPS</li> <li>- UWWTD Monitoring for flow compliance at WTW and WWTW</li> <li>- Advanced</li> <li>- Water Framework Directive – Groundwater Investigation – Non-Detrimental</li> </ul> | <ul style="list-style-type: none"> <li>- European Sites Inv.</li> <li>- Invasive and non-native species inv</li> <li>- Physical modification on fish passage</li> <li>- WFD Flow Investigations</li> <li>- Environmental Destination inv</li> <li>- Env Act Continuous water quality</li> <li>- Bathing Water inv – NS</li> <li>- Bathing Water inv – S</li> <li>- WFD Inv – water quality and for poor and bad water bodies</li> <li>- Nitrogen Technically Achievable Limit Trials</li> <li>- 25-Year Plan inv and imp</li> <li>- Invasive &amp; non-native species</li> <li>- Chemicals improvements</li> <li>- Enviro Act P removal</li> <li>- Nutrient Neutrality</li> <li>- UWWTD Growth</li> <li>- Newly Designated UWWTD sensitive areas (nitrate)</li> <li>- WFD – Improving water quality</li> <li>- Septic tank treatment</li> <li>- BW – Lower than excellent</li> </ul> | <ul style="list-style-type: none"> <li>- Biodiversity and SSSI investigations</li> <li>- Chemical investigations</li> <li>- Estuarine: Investigations</li> <li>- Inland watercourses: Investigation</li> <li>- Biodiversity and SSSIs</li> <li>- Env. Act SO Improvements</li> <li>- Env. Act spills reduction Improvements</li> <li>- Sludge Use in Agriculture Improvements</li> </ul> |
| <b>Distribution of the impact on the industry</b>                                      |   |  |  |
| <b>Availability of resources</b>   |   |  |  |
| <b>Availability of material</b>  |   |  |  |



# Phase 3: Is AMP8 Deliverable?



# Estimating the annual construction demand of AMP8

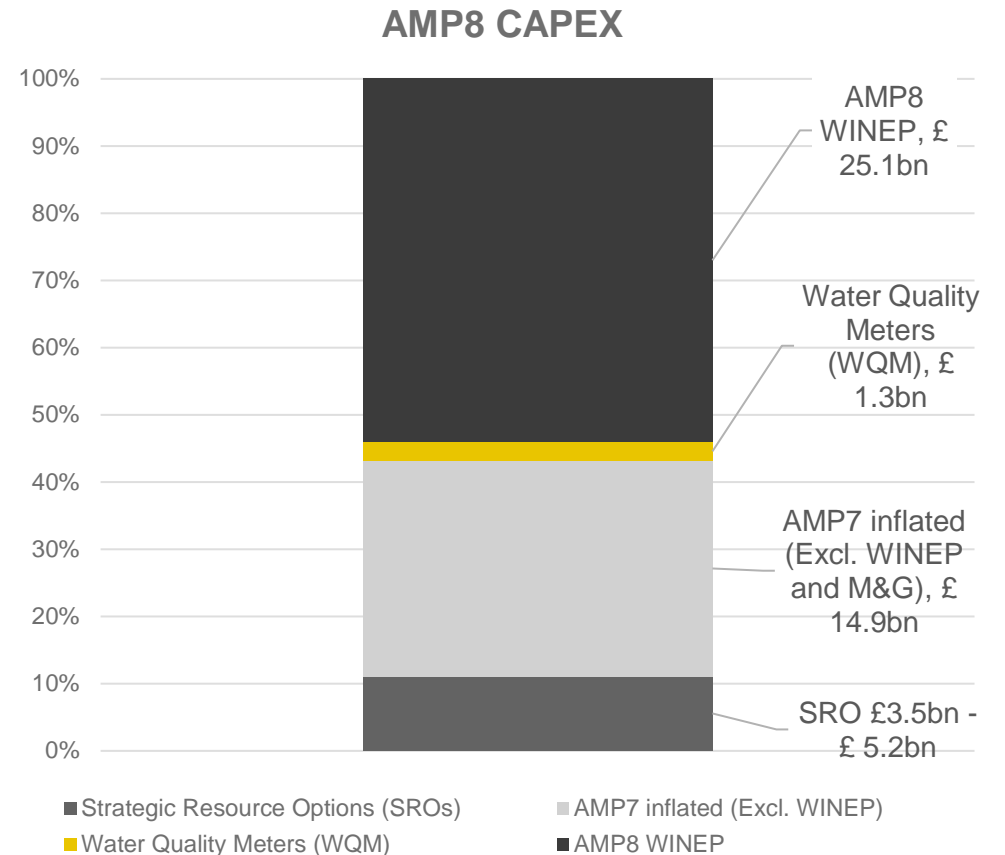
**Total planned capital expenditure (capex) AMP8 is forecast to range between £44.8bn - £46.5bn**

This value is composed of an assumed repeat of the AMP7 base and enhancement planned expenditure minus AMP7 WINEP (at FD, inflated) plus the additional AMP8 WINEP planned capex with the addition of Water Quality Meters (WQM) and AMP8 Strategic Resource Options (SRO) activity.

Stantec has estimated a range of construction demand between 55-60% of the AMP8 planned capex. This is based on Stantec's experience over 25 years of involvement in water sector investment programmes, recognising that a significant proportion of total capex is not construction demand (central overhead, WaSC costs, 3<sup>rd</sup> parties, design, fees, gainshare).

**Construction demand is estimated at £24.6bn- £27.9bn/AMP8.**

**Across the 5-year AMP period, estimated construction demand averages at £4.9bn - £5.6bn p.a.**



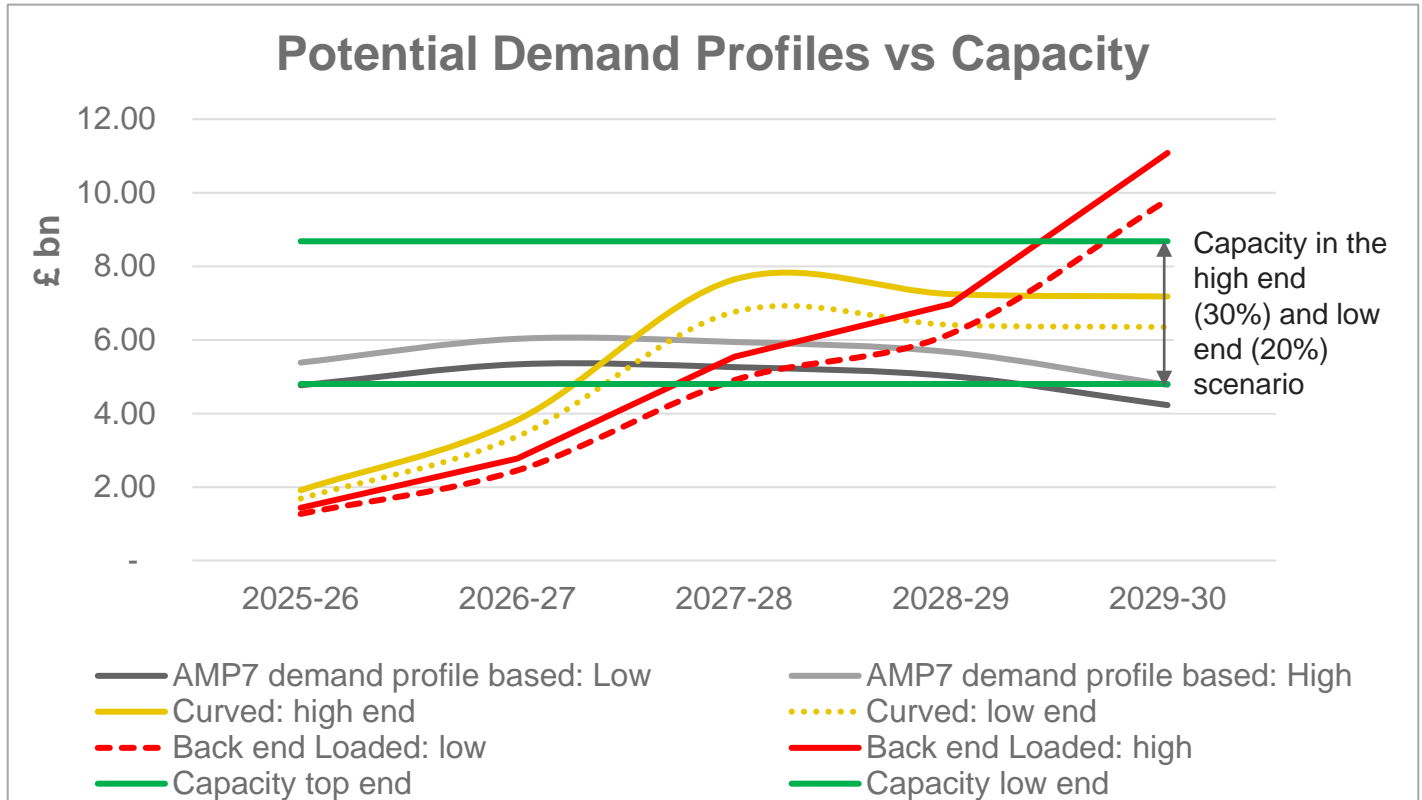


# Demand profiling & Capacity Assessment for AMP8

To profile the AMP8 demand across the 5-year period 2025-2030, we have assumed similar spend profile to that of the AMP7 Final Determination spend profile.

To illustrate the impact of shifting demand on static capacity, we have also modelled a back-end loaded construction demand profile.

*An early communication of a commercial pipeline is essential to securing appetite as it allows suppliers to plan their business accordingly and allocate AMP8 demand to their business plans.*



Capacity high and low scenarios represent a range in AMP7 existing supply chain capacity, reflective of information obtained during this desktop study (suppliers leaving the sector though business planning or insolvency, resourcing constraints, etc.). Note: this capacity is profiled as unchanging over the duration of the AMP8 delivery period.



# What are some positive potential mitigating actions and initial observations re: Construction theoretical capacity vs. increase in volume?

## Strategic Engagement

- Establish a collaborative forum for the water companies and work together to define the sector's AMP8 requirements.
- Engage with the existing supply chain, sharing the holistic demand and current thinking on contract packages, risk allocation, scheduling etc. and record appetite and feedback.
- Work together to manage the demand in an informed manner, based on what the market says and with intention to avoid 'hot-spots' in geographical demand, time demand (peaks) and supply demand (products, like water meters, or monitors etc.).
- Explore collaborative arrangements with other sectors clients, such as Environment Agency.

## Tactical Engagement

- Engage with segmented areas of the market directly, and as soon as possible.
- Prevent market shrinkage and explore attracting new entrants (Note: it takes around 2 years to create a new market).
- Monitor the supplier market, having shared high level visibility of the AMP8 demand.





**Phase 3: What might some of the mitigation actions be to make AMP8 deliverable?**



# New Investment area pinch points and challenges and mitigation actions

## Chemical drivers

## Storm overflow drivers

## Biodiversity investigation drivers

## Sludge to land driver

## Water quality monitoring

## Workforce demand



- Engage with broader supply chain to identify Tier 2/3/4 Contractors for equipment installation or community solutions.
- Increase routes to market for SMEs providing 30% of supply chain as sub-contracts (untapped availability)
- Plan for WaSC enabling resource capacity e.g., Comms' and Stakeholder Management, Lawyers, Planners



- Recruit key skills in anticipation of AMP8 e.g. ecology and habitat professionals.
- Engage in training and development with local/regional education establishments geared for the next generation of water industry specialists and professionals. Bring more workers into the water sector, through new apprenticeships, technicians and graduates and attracting skilled workers from other industries.
- Plan for innovation and design for modern methods of construction



- Respond to water company engagement and prepare for the challenges
- Working with companies, build a resource loaded schedule and optimise to flatten resource demand, inform resource need/timing and identify opportunity
- Assess graduate output over time (e.g. habitats/ecology graduates) and assess where capacity has gone to attract back into workforce.
- Engage with broader consultancy supply chain to identify partner organisations, to better manage workload peaks



- Analyse market for manufacturers of new, new-in-sector or existing supply chain. Articulate demand in AMP8 and analyse existing capacity
- Consider regional collaboration of companies with similar challenges
- Develop a commercial model to procure and store items to smooth out manufacturing peaks and troughs
- Actively encourage and look for innovation
- Standardising design for common components to maximise new entrants to the market
- Engage with manufacturers and supply chain planning, production scheduling, and demand planning
- Encourage manufacturers to challenge standards and company operational risk appetite



- The next 2 years are critical in making AMP8 deliverable. The earliest possible clarity on requirements will help the considerable effort required e.g. promote with certainty the top priority investments to enable early engagement.
- Release an interim determination covering the most certain components of AMP8 WINEP to allow its development to start in 2023.
- Encourage movement away from carbon-intensive grey solutions with flexibility where the blue/green / hybrid alternatives may take longer to plan and establish.
- Consider slower pace of demand increase to enable a sustainable and managed increase in UK capacity (especially availability of expertise) to ensure best value and affordability without diminishing the environmental ambition and outcomes.





## New and/or high volume equipment or materials demand and challenges

### Storm overflow drivers

### Biodiversity investigation drivers

### Water quality monitoring

### Phosphorus removal driver



- Achieve completion of AMP7 without material loss of its capacity and avoiding the inter-AMP drop in workload for some parts of the supply chain.
- Engage early with supply chain to generate appetite for AMP8 and beyond.
- Build a resource loaded schedule and optimise to flatten demand.
- Consider alternative delivery models that mitigate company resource pressures and incentivises the supply chain.
- Start AMP8 delivery planning, surveys and design work in 2023/24 to ensure a running start to AMP8.
- Establish critical equipment / material frameworks; Consider collaboration amongst companies where appropriate



- Respond to water company engagement and prepare for the challenges
- Get early visibility of AMP8 programme including the substantial AMP8 WINEP programme
- Recruit key skills in anticipation of AMP8 e.g. ecology and habitat professionals; recruit locally
- Engage in training and development with local/regional education establishments geared for the next generation
- Engage with broader Contracting supply chain to identify partner organisations, where appropriate, to manage volume
- Embrace digital delivery, innovate, increase productivity and deliver more
- Plan for innovation and design for modern methods of construction
- Apply the full suite of delivery efficiency levers to maximise production and minimise waste
- Challenge standards and company operational risk appetite

- Achieve completion of AMP7 without material loss of capacity inter-AMP.
- Respond to water company engagement and prepare for the challenges
- Working with companies, build a resource loaded schedule and optimise to flatten resource demand, inform resource need/timing and identify opportunity
- Embrace digital delivery, innovate, increase productivity and deliver more
- Apply "Runways" to focus on complex projects and release less-complex projects to the supply chain
- Challenge standards and company operational risk appetite

- Analyse market for manufacturers of new, new-in-sector or existing supply chain
- Articulate demand in AMP8 and analyse existing capacity and identify AMP8 shortfall. Assess risk of UK and non-UK production
- Establish frameworks and procure; Consider collaboration for companies with similar challenges
- Consider commercial models to develop capacity and guarantee demand; procure and store items to smooth out demand
- Actively enable and look for / promote and finance innovation
- Agree a standard design using common components to maximise new entrants to the market and mitigate risk
- Engage with manufacturers and supply chain planning, production scheduling, and demand planning
- Enable manufacturers to challenge standards and company operational risk appetite

- Consider slower pace of demand increase to enable a sustainable and managed increase in UK capacity (especially availability of expertise) to ensure best value and affordability without diminishing the environmental ambition and outcomes
- Develop risk-balance mechanisms to recognise extraordinary equipment / component / commodity inflationary pressures to reassure future delivery capacity
- Enable movement away from carbon-intensive grey solutions with flexibility where the blue/green / hybrid alternatives may take longer to plan and establish
- Influence and encourage development of green solutions achieving wider benefits through collaboration with Local Authorities, Environment Agency, National Highways and Developers
- Legislation to support land access, purchase and negotiation of easements
- Release an interim determination covering the most certain components of AMP8 WINEP to allow its development to start as soon as possible

## Resource / Workforce demand and challenges

**The resource gap** (Currently full employment in the UK and water sector has AMP7 delivery)

**The workforce and resource demand** challenge extends across water companies, consultants, contractors, manufacturing and regulators.

**Lack of skillset** - green/ecology/habitat professionals, and demand for them from developers who have Biodiversity Net Gain targets to meet

**Resources supply shortage** (e.g. consultants, modelers, landscape / urban designers, contractors) required for AMP8 WINEP are in short supply.



- Achieve completion of AMP7 without material loss of its capacity and avoiding the inter-AMP drop in workload for some parts of the supply chain.
- Engage early with supply chain to generate appetite for AMP8 and beyond.
- Build a resource loaded schedule and optimise to flatten demand.
- Consider alternative delivery models that mitigate company resource pressures and incentivises the supply chain.
- Start AMP8 delivery planning, surveys and design work in 2023/24 to ensure a running start to AMP8.
- Establish critical equipment / material frameworks; Consider collaboration amongst companies where appropriate



- Consider slower pace of demand increase to enable a sustainable and managed increase in UK capacity (especially availability of expertise) to ensure best value and affordability without diminishing the environmental ambition and outcomes
- Develop risk-balance mechanisms to recognise extraordinary equipment / component / commodity inflationary pressures to reassure future delivery capacity
- Enable movement away from carbon-intensive grey solutions with flexibility where the blue/green / hybrid alternatives may take longer to plan and establish
- Influence and encourage development of green solutions achieving wider benefits through collaboration with Local Authorities, Environment Agency, National Highways and Developers
- Legislation to support land access, purchase and negotiation of easements
- Release an interim determination covering the most certain components of AMP8 WINEP to allow its development to start as soon as possible



- Respond to water company engagement and prepare for the challenges
- Get early visibility of AMP8 programme including the substantial AMP8 WINEP programme
- Recruit key skills in anticipation of AMP8 e.g. ecology and habitat professionals; recruit locally
- Engage in training and development with local/regional education establishments geared for the next generation
- Engage with broader Contracting supply chain to identify partner organisations, where appropriate, to manage volume
- Embrace digital delivery, innovate, increase productivity and deliver more
- Plan for innovation and design for modern methods of construction
- Apply the full suite of delivery efficiency levers to maximise production and minimise waste
- Challenge standards and company operational risk appetite

- Achieve completion of AMP7 without material loss of capacity inter-AMP.
- Respond to water company engagement and prepare for the challenges
- Working with companies, build a resource loaded schedule and optimise to flatten resource demand, inform resource need/timing and identify opportunity
- Embrace digital delivery, innovate, increase productivity and deliver more
- Apply "Runways" to focus on complex projects and release less-complex projects to the supply chain
- Challenge standards and company operational risk appetite

- Analyse market for manufacturers of new, new-in-sector or existing supply chain
- Articulate demand in AMP8 and analyse existing capacity and identify AMP8 shortfall. Assess risk of UK and non-UK production
- Establish frameworks and procure; Consider collaboration for companies with similar challenges
- Consider commercial models to develop capacity and guarantee demand; procure and store items to smooth out demand
- Actively enable and look for / promote and finance innovation
- Agree a standard design using common components to maximise new entrants to the market and mitigate risk
- Engage with manufacturers and supply chain planning, production scheduling, and demand planning
- Enable manufacturers to challenge standards and company operational risk appetite





# AMP8 Deliverability: Current situation?

Past / current regulatory approach "More for Less"

Major Contractors opting out of Water Sector

Alternative attractive markets

Current AMP7 Delivery Performance

UK Workforce and Specialist Skills

Hyper-inflation on specific products

Tight statutory deadlines

Appetite of AMP7 Supply Chain

Ability of / appetite for current Contractors to invest

Scale of AMP8 programme

High carbon programme (storm overflows)

Theoretical Capacity unlikely to be realised in current environment

Theoretical Capacity likely to be exceeded by spend profile

Availability of equipment and supplies

Self-generated inflationary pressures

Alignment with National Infrastructure and Construction Pipeline

Potential down-turn in other sectors

Potential banking sector issues affecting confidence

Opportunity for improved value using green solutions

Marginal / theoretical supply chain capacity

Prioritising investment not likely to be regretted

Public perception of the sector and its reputation

Government moves to retain older workers

Scale of AMP8 programme

AMP8 WINEP 90%-95% statutory programme

Potential for incentivised Delivery models that use statutory expenditure

**Discouraging**

**Enabling**







# AMP8 Deliverability:

shifting the balance in favour of deliverability

**Discouraging**

Grow workforce and Specialist Skills

Provide programme confidence to support engagement and ensure availability of equipment and supplies

Improve current AMP7 Delivery Performance with AMP8 in mind

Engage with critical supplier and manage Production to avoid Self-generated inflationary pressures

Balance spend profile to manage capacity and avoid excessive demand whilst growing.

Develop appetite of AMP7 (or new) Supply Chain

Maximise regional share of theoretical Capacity

Marginal / theoretical supply chain capacity

Prioritising investment not likely to be regretted

Incentivise improved value using green solutions

Reduce carbon impact of programme (storm overflows)

Develop risk-balance mechanisms to reassure re: inflation

Public perception of the sector and its reputation

Government moves to retain older workers

Attract back Major Contractors previously opting out of Water Sector

Develop approach for green solutions and tight statutory deadlines

Become regional clients of choice

Scale of AMP8 programme

AMP8 WINEP 90%-95% statutory programme

Potential for incentivised Delivery models that use statutory expenditure

Compete with alternative attractive markets

Support current Contractors to invest

**Enabling**



# Phase 4: Are External factors going to impact AMP8 deliverability?



# Key Phase 4 outcomes

- **UK and global inflationary pressures** continue but are stabilising
- Higher interest rates and inflation are **reducing construction activity** in some sectors.
- Economic uncertainty leading to **delays, cancellations, and less work being requested** by customers; this has particularly contributed to an ongoing slowdown of work in the housing sector
- **Resource availability** is holding back growth across Europe
- **UK and Europe aging populations** and early retirement impacting public finances and ability to grow economies.
- **Innovation** has a large part to play in AMP8 – e.g., adoption of AI has potential to mitigate some resource challenges (e.g., Microsoft 365 Co-pilot, ChatGBT)
- Post-Brexit, post-pandemic, **supply chain disruption stabilising**
- **War** in Ukraine has continuing potential to disrupt materials supplies, especially if the conflict were to extend beyond Ukraine
- **Geopolitical uncertainties** e.g., China's reunification agenda with Taiwan has potential to cause major disruption to manufacturing if a conflict were to occur. Taiwan is home to 92% of the global production of logic semiconductors.



# Key conclusions from Phase 4 analysis

## Factors supporting AMP8 deliverability

- ✓ Substantial investment planned for the UK water sector
- ✓ Early indication that inflation and price instability is causing slow-down with potential to improve attractiveness of the water sector
- ✓ Energy and commodity prices stabilizing
- ✓ Macro scenario easing in the mid-long term

## Factors challenging deliverability

- ✓ Unattractiveness of the sector to the supply chain
- ✓ Substantial and attractive non-water sector investment programmes under way or planned
- ✓ Availability of specialist skills, aging population and growing demand



# A “helicopter view” on the outcomes of AMP8 Deliverability

**The overall scale of the programme is unprecedented for the water sector. It marks a step change in the delivery challenge at a time when contractors are leaving the sector because of programme uncertainty, risk allocation and poor margins/loss-making performance and the entire sector is struggling to recruit. Also, such capacity that there is may not be in the right regions, exacerbating AMP8 deliverability challenges.**

- ✓ Sector needs to provide an attractive and compelling long-term offer to supply chain to draw them in - company and regulatory actions required to achieve this
- ✓ Sector needs to be attractive to people – this is likely to require coordinated action and won't have an instantaneous effect
- ✓ Regulatory flexibility in timelines for investigations and solutions will enable better mobilisation, improve benefits, achieve environmental, net-zero and biodiversity ambitions and contribute more to tackling climate change





**Executive Summary  
Concluded**