

UUWR_82

PR24 Draft Determination: UUW Representation

Area of representation: Other - Deliverability (Capital Delivery and Supply Chain)

August 2024

This document outlines United Utilities response to Ofwat's draft determination as to the deliverability of United Utilities AMP8 Business plan. It presents a capability narrative, demonstrating the activities United Utilities has undertaken to support deliverability of the plan since the submission in October 2023. It also provides a summary of the impact of the draft determination on deliverability of the plan and a view of United Utilities reassessment of the deliverability position in answer to the determination.

Reference to draft determination documents:

- [PR24-draft-determinations-United-Utilities-Quality-and-ambition-assessment-appendix.pdf \(ofwat.gov.uk\) Page 7](#)

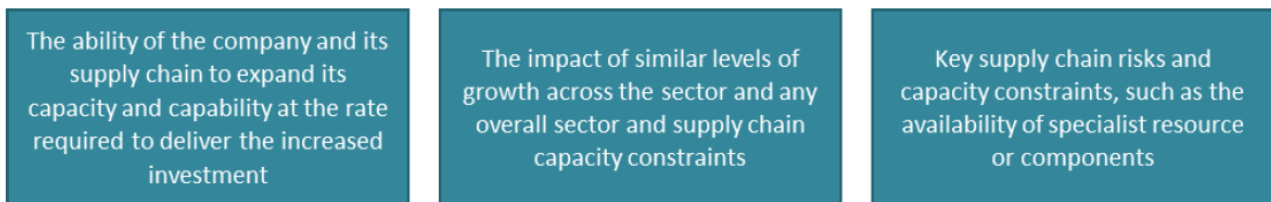
1. Key points

- **United Utilities is one of 5 companies to have met Ofwat’s quality and ambition assessment in relation to Deliverability.** Ofwat is confident that United Utilities Board presented a detailed assurance statement on Deliverability in line with the business plan presented in October 2023.
- **Ofwat has stated that United Utilities presented sufficient and convincing evidence that the investment proposals within its PR24 business plan are deliverable.** Ofwat recognised United Utilities had fully understood the capability and capacity to deliver our ambitious AMP8 programme and had sought external assurance and challenge to demonstrate our approach was robust.
- **United Utilities has continued to successfully progress its Deliverability activities since October 2023** Successful procurement of 29 partners representing circa 85% of the overall programme, extensive developments in digital technologies and standardisation as well as robust internal readiness and transformation plans building on the learning from accelerated programmes.
- **The Draft Determination presents an undeliverable challenge to enhancement funding in comparison to October 2023 business plan.** This reduction in enhancement case funding would significantly impact on United Utilities ability to deliver its regulatory commitments in AMP8 and would render the plan undeliverable.
- **United Utilities has reassessed its plan considering the draft determination and presented a comprehensive response to Ofwat’s determination.** United Utilities has undertaken an in-depth review of our plan, scope, costs and deliverability and has presented a revised and fully evidenced plan for consideration.
- **United Utilities Board is confident that the revised plan is deliverable**

2. UUW's PR24 proposal

Our October 2023 supplementary document set out United Utilities confidence in the deliverability of our AMP8 business plan. As part of its PR24 final methodology, Ofwat set out its expectations on Board assurance relating to deliverability, requiring that Boards have challenged plans and satisfied themselves that *“PR24 plans and the expenditure proposals within them are deliverable and that the company has put in place measures to ensure that they can be delivered. This includes setting out the steps the Board has taken to satisfy itself that supply chain risk is manageable and delivery plans account for”* the following three areas (shown in Figure 1 below):

Figure 1: Ofwat's deliverability tests



Source: UUW47 Deliverability – Section 2.5.3 Page 9

United Utilities evidenced we had met the Deliverability tests by demonstrating;

- **Our programme is ambitious:** We have developed comprehensive long-term plans that set out how we will address the significant challenges that the water sector is currently facing. Our PR24 plan is an ambitious but necessary next step in delivering these proposals. We fully recognise that the capital programme is a step up from our current programme and that this requires new capabilities and skills that we have not tapped in to at this scale before.

- **We understand and are managing the challenge:** We have assessed and are fully cognisant of the challenges of delivering our largest ever programme. We have moved quickly to put in place a readiness programme and we are now applying these new approaches, testing them, learning from them and improving them in our AMP7 programme and under our accelerated funding streams ready for AMP8.
- **We are transforming our business:** We recognise the need to restructure our engineering, capital delivery and procurement approach and attract new skills and capabilities as well as improving our processes to deliver our plan. We are well underway with this and are already utilising new teams and approaches to deliver on our early start programmes and are positive about the opportunity that early funding gives to allow us to do this.
- **We are securing the required suppliers:** We have expanded our engagement approach, and this has demonstrated that there is sufficient capability and capacity to support our plan. Our supply chain feedback shows that they recognise this as a huge opportunity, they feel well informed, understand the challenges and feel ready and able to deliver with us. This has allowed us to make very good progress in securing a wider range of supply chain partners than ever before.
- **Our programme is deliverable:** Although our plan is large it has been developed in a way that ensures that the pace and ambition within the plan reflects the capacity within the business and supply chain as well as the practicalities and timescales involved in transitioning to some of the new approaches that will be required.
- **We have had independent challenge to ensure we're on track:** We have utilised external expertise to support, critique and verify the details of our plan, the key assumptions supporting the plan, our delivery approach and our transformation approach. We have incorporated this feedback into our proposals, and we are confident that we are ready to accelerate our delivery to meet our ambition for AMP8 and beyond.

Detailed examples of activities demonstrating how United Utilities had met the key Ofwat Deliverability tests at the point of submission was summarised in Figure 2 below.

Figure 2: Examples of how we met key Ofwat Deliverability Tests in our October 2023 submission

| | | | | | |
|--|--|---|--|--|--|
| <p>1. The ability of the company and its supply chain to expand its capacity and capability at the rate required to deliver the increased investment.</p> | <p>Implemented an organisational wide revised operating mode supported by ARUP 4.1.3</p> | <p>Investing in our people and skills to retain and attract the skills we need 4.4.3</p> | <p>Adopted a 5 Counties place based planning approach 4.6.1</p> | <p>Commenced procurement to appoint the right supply chain partners 5.3.3</p> | <p>Shared a long term view of investment to encourage growth across the sector 5.3.22</p> |
| <p>2. The impact of similar levels of growth across the sector and any overall sector and supply chain capacity constraints</p> | <p>Appointed an Independent Scrutiny Panel 3.2.1</p> | <p>Advanced WINEP and focus on Partnership Working 4.6.6</p> | <p>Two Prior Information Notices (PIN) issued to the market. Nine supplier engagement events and 50 workshops 5.2.2 - 5.2.4</p> | <p>Designed a fit for purpose delivery model to maximise market capacity and skills 5.3.16</p> | <p>Assessed the market to confirm capacity across the sector 5.3.32</p> |
| <p>3. Key supply chain risks and capacity constraints, such as the availability of specialist resource or components</p> | <p>Procurement underway for supply & design partners and specialist skills such as nature based solutions and smart metering 4.5.7</p> | <p>Extensive supply frameworks in place for critical equipment, materials and kit allows us to lock-in pricing and secure supply 5.3.37</p> | <p>Aggressively pursuing product and solution standardisation to allow a "design once, deploy multiple times" approach 6.1.1</p> | | <p>Leveraging innovation and seeking new ideas that can be sourced, tested and adopted 7.1.1</p> |

Source: UUW47 Deliverability – Section 2.5.3 Page 9

3. Draft determination position

United Utilities is one of 5 (out of 14) companies to have met the quality and ambition assessment set by Ofwat at draft determination. In the draft determination, Ofwat stated that United Utilities provides sufficient and convincing evidence that the investment proposals within its PR24 business plan are deliverable, and that United Utilities has met the minimum expectations in this area (PR24-draft-determinations-United-Utilities-Quality-and-ambition-assessment-appendix.pdf (ofwat.gov.uk) page 7).

Ofwat commented *“The Board provided a detailed assurance statement on deliverability. The company set out the capacity and capability required to deliver. It set out a detailed plan for delivery including setting up a*

transformation directorate. It has engaged with suppliers and contractors and considered a range of risks and mitigation activities, and developed an accelerated procurement programme, representing 70% of its 2025-2030 programme, and expects to have more than 20 partner organisations in place by October 2024. It set out that the accelerated infrastructure delivery programme has enabled it to make an early start on one third of the 2025-2030 storm overflow schemes and increase skills and capability ahead of time”.

The October 2023 submission demonstrated that we have assessed and are fully cognisant of the challenges of delivering our largest ever programme. Our ambition and readiness plans were assessed by several industry experts to provide confidence that United Utilities fully understood the challenge and was building the internal and external capability and capacity required to deliver.

We recognised the need to restructure our engineering, capital delivery and procurement approach and attract new skills and capabilities as well as improving our processes to deliver our plan. In terms of our supply chain, we needed to attract suppliers with the right skills and capability, but also the build the right relationships with the right number of suppliers to ensure there was sufficient capacity to deliver the plan at the desired pace.

4. Our Progress Since October 2023 Submission

Since the submission in October 2023 United Utilities has continued to deliver on our strong track record and to meet the commitments as set out in the deliverability assessment. The section below provides an update as to the key activities undertaken by United Utilities in relation to Ofwat’s 3 Deliverability Tests.

The ability of the Company and its supply chain to expand its capacity and capability at the rate required to deliver the increase investment

Organisational Readiness and Transformation

The ARUP report (UW47 Deliverability, Section 3.2) envisaged a Transformation programme in 3 phases: Plan & Design, Build for Scale, and Ready Enough. We completed the Plan & Design phase in the first quarter of 2024 and are currently deploying the Build for Scale phase.

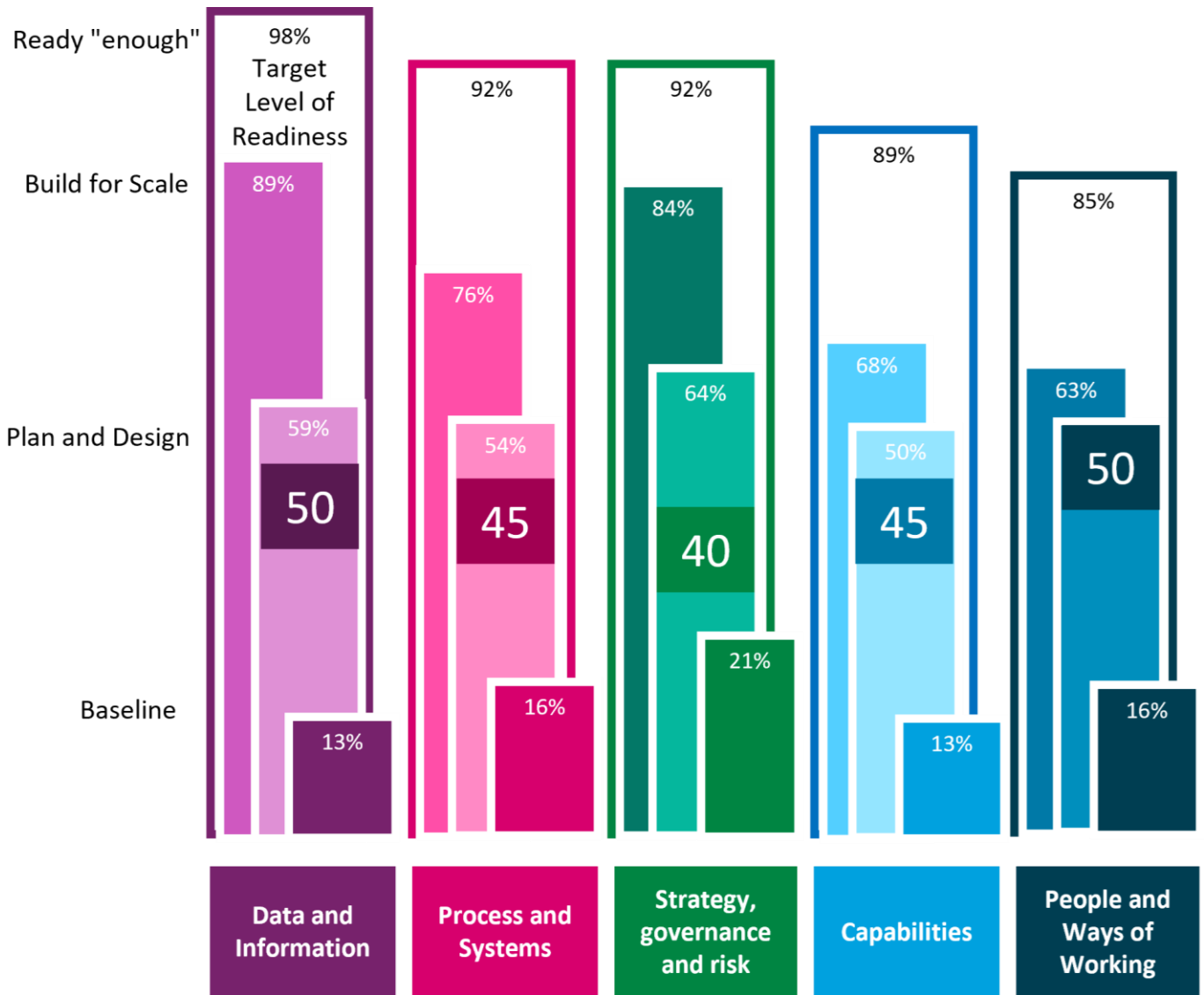
We have continued to develop our readiness plans with multi-disciplinary teams delivering critical change initiatives across workstreams such data and information, processes and systems, strategy governance and risk, capabilities and ways of working. The Transformation programme is a critical enabler for our AMP8 delivery programme and recognises the step change required to ensure United Utilities is ready and able to deliver our stretching plans.

Our transformation plan is wide reaching with a ‘Talented Change’ Team made up of experts and influencers from across the business who can design and implement the changes needed in each directorate. Our Executive are driving the organisational changes required to deliver the readiness programme and act as the design authority for the programme with biweekly Executive Working Group reviews, monthly oversight on progress at the Executive Performance Meeting and regular in depth presentations at United Utilities Board level.

We have introduced a new Value Framework to support and embed the requirements of AMP8 into all levels of organisation decision making. This includes the lessons we have learned from the Transitional Investment and Accelerated Delivery Teams who are already delivering and testing our new ways of working and driving efficiency and improvements day to day (section 4.1.8 provides further detail in relation to our Resource Management Strategy and Growth in these areas).

The ‘test and learn’ capability being driven through the Manchester County Trial (please see section below) further supports this culture of learn and fail fast in order that we can accelerate and adopt these learnings in our readiness plans across the entire organisation. Figure 3 below demonstrates our progress against the key transformational areas identified by ARUP with the initial baseline, our progress and the target state identified. This clearly shows the significant progress has been made since October 2023 submission.

Figure 3: An assessment of United Utilities progress and maturity against the ARUP Report key workstreams



Source: United Utilities Organisational Transformation Programme

Resource Management Strategy and Growth in Critical Resources required to support Delivery

Securing the resources required to deliver our stretching programme, particularly in areas of significant growth, is essential to our deliverability assessment. Since submission, and in full alignment with the transformation programme, United Utilities has continued to build the capability and capacity required to deliver. We have developed a companywide attraction and recruitment strategy and onboarded a new supply chain recruitment partner to support us in sourcing the talent and skills needed for critical roles.

In terms of growth, we have expanded our Capital Delivery, Engineering and Commercial teams by a total of 10%, across critical skills in functions such as Commercial, Engineering and Programme and Project Management. Our plan is to recruit additional capability to continue to support delivery of the programme and against our resource management plan we have recruited almost 50% of agreed growth roles. This brings fresh talent into our organisation with different sector expertise to broaden our capability. Recruitment is also ongoing on for key roles in the Asset Management and Operations teams as these roles are key to the successful initiation and sponsorship of projects and programmes and to the operational interface during construction and commissioning of assets. The new roles and restructured organisation fully support the new five counties model.

From securing accelerated investment in April-2023 we have established a multi-functional and multi-county execution team within our Better Rivers Directorate comprised of 200 dedicated staff. This directorate is solely focussed on delivering our stretching storm overflow reduction programme and will be supplemented by specialist supply chain resources (further information below). As we recognised the growth in green and hybrid

solutions as part of our long-term ambition, we are confident we will exceed our commitment of 100 new “Green Apprenticeships” by 2025 as we are forecast to have recruited as 162 “Green Apprentices by September 2024.

The Better Rivers Directorate has been implemented in line with the 5 counties model. However, in a true learning and developing best practice culture, Better Rivers have recognised the magnitude of work required in the Cumbria region and as such have further subdivided into Cumbria East and West to better manage delivery of the programme. Specific resources have also been dedicated to the scope in and around Windermere.

We have also focussed on building capability within a designated team of specialists focused on accelerating delivery of capital schemes through a Transitional Investment (TI) task team. The purpose of this team is to support deliverability of the projects with the most pressing regulatory dates. The model is completely aligned with the five counties approach and is testing AMP8 ways of working through early integration with new supply chain partners, as detailed below. The TI team will complete the ‘Initiation’ and ‘Feasibility’ phases for 76 projects and partial completion of the delivery phase and will focus on delivering the best value solution.

The Five Counties Approach

The Five Counties approach recognised that thinking and delivering locally is important for successfully delivering AMP8 and we have now delivered the changes to our operating model to emphasise end to end accountability for delivery and have formed multi-disciplinary teams for each of the programmes (Water, Wastewater, Better Rivers) aligned to our Five Counties Model. In moving to our county-based operational management model, we aim to improve the pace of decision-making and remove unnecessary time and effort in providing governance and oversight. We see that closer integration between our operational and capital delivery teams at county leadership level as a critical success factor.

United Utilities implemented a five counties model at the start of 2024 with a single senior operational leader in place for each of our five counties, all located geographically within the county area. The concept has since been embedded with colleagues from across operations, asset management, capital delivery and customer teams taking a holistic approach to resolving issues and identifying opportunities. From a customer and stakeholder perspective the county model provides clear accessibility to United Utilities key personnel with the right individuals in place to resolve issues when they arise. This model has helped to remove any previous silo working between departments and make United Utilities easier to deal with as an organisation

We have created a ‘test and learn’ capability within our Manchester County, where we are trialling the new ways of working, process, governance and systems so we can learn and adopt this across the entire region. This is already delivering positive outcomes, for example by bringing our wastewater network and treatment teams into one team we are more readily able to identify upstream network issues and minimise need for investment at our treatment works. We are also able to utilise some of our network teams and equipment at our treatment works, which is driving operational efficiency.

Further enhancing our capability through use of Data and Technology

At United Utilities we consistently challenge ourselves to drive efficiency and optimisation and since our original submission we have continued to enhance our Programme Management Office (PMO) service offering. As such we have adopted the application of Project Data Analytics to help us develop ways to provide even better insights and predictive analysis into our project delivery information. We are upskilling our team members in the application of project data analytics and have enrolled a cohort of colleagues on a Level 4 Project Data Analytics apprenticeship to develop new skills that can then be shared more broadly across our organisation to maximise the benefit of their learning.

We are working with a data analytics partner to help us develop a solution on how to automate the reporting of performance data with our supply chain. As we grow from our current two Construction Delivery Partners in AMP7 to potentially over 100+ partners across a variety of delivery runways in AMP8, the introduction of data analytics and artificial intelligences (AI) solutions will drive efficiency in the management and reporting of data and in turn will allow us to undertake streamlined and effective supplier and programme performance management without the need for exponential growth in the number of individuals required to manage the data/process.

United Utilities has also joined the Project Data Analytics Coalition, which is a collective of cross industry-leading organisations (such as EDF, Rolls Royce, Environment Agency, Ministry of Defence) that have come together to explore and leverage the power of data analytics. The fundamental belief driving this coalition is that the challenges and opportunities presented by Project Data Analytics are too vast and complex for any single organisation to tackle alone. By pooling our resources, sharing knowledge, and expertise, we collectively aim to accelerate our progress and adoption of AI solutions and the necessary Project Data analytical skills our teams need, that will in turn improve project delivery performance.

Supply Chain specialist resources

Our runway operating model and procurement strategy involves appointing a range of different partner organisations, from very large with lots of capacity, to smaller specialists (including locally based suppliers to support and develop local businesses), who have less capacity but who bring specialist and scarce capabilities. Our initial procurement activities were focussed on appointing the larger contractors and design partners first as they bring the largest amount of capacity. We are pleased that in deploying this strategy we have already secured enough capacity to deliver c.75% of our programme.

We also have several active procurement processes ongoing (planned to conclude in Autumn 2024), to appoint a number of additional partners, providing us with access to specialist resources that will be critical in supporting United Utilities to successfully deliver our ambitious programme. These resources include;

- 6 Specialist design partners (comprising 3 Rainwater Management, and 3 detailed design specialists)
- 6 Network modelling and 5 specialist modelling partners.
- 4 Commercial, Cost Assurance, Estimating, Project Management & PMO specialist consultants
- A number of Rainwater management delivery partners and specialist local delivery partners
- Specialist reservoir contractors

The impact of similar levels of growth across the sector and any overall sector and supply chain capacity constraints

Successful Procurement of our Runway Approach

In our business plan submission *UW47 Deliverability - Section 5* we demonstrated the extensive market engagement strategies deployed by United Utilities to engage the supply chain as part of our procurement process. Our market engagement activities generated significant interest in AMP8, and we used learnings from this engagement to understand the most suitable contract types, risk positions and operating models and to develop robust and attractive offerings to the market. This culminated in our delivery 'runways approach' designed to ensure we could access the right capability and capacity required within the market to deliver our extensive capital programme.

Throughout the procurement process we have continued to develop the requirements to ensure that we can access the known scarce resources required to deliver our ambitious programme. This has included ensuring each procurement route is the most advantageous, testing specific capability within each framework, ensuring each framework agreement has suitable terms and conditions whilst ensuring consistency within contract types for ease of use. For each tender we received significant market interest to promote robust competition and we continued to drive best value through the negotiated procurement process.

We are pleased to confirm deployment of our approach has been successful and can be evidenced by the successful delivery of a suite of our most critical procurements ahead of schedule, meaning we are performing ahead of our expected procurement delivery timeline. United Utilities expected to have procured 20 partner organisations by October 2024 in support of its ambitious AMP8 capital programme. As of July 2024, we have agreements with 29 partners including the Strategic Solutions Identification Partners (Now known as the Strategic Solutions Team), Complex Design and Build, Detailed Design and Build Partners and Design Delivery Partners. This meets our need for a larger and more diverse supply chain to deliver the AMP8 capital programme.

The partners awarded include the Strategic Solutions Team Partners (SST's), Jacobs and Tetra Tech/RPS, who will form a critical role in driving programme efficiency. We have also successfully awarded contracts to 6

Construction Delivery Partners (J Murphy and Sons, Mott MacDonald Bentley, Kier Infrastructure, MWH Treatment, C2V+ who are a joint venture of Volkerstevin and Jacobs, and Costain). These partners along with one of the SSTs forms our new Enterprise delivery model, shown in Figure 4. This is a significant change in United Utilities operating model and is planned to deliver circa £2.8bn of the capital programme in AMP8, focusing on the largest and most complex projects in our programme, with projects ranging in value from £20m at the lower end to £350m+ at the upper end.

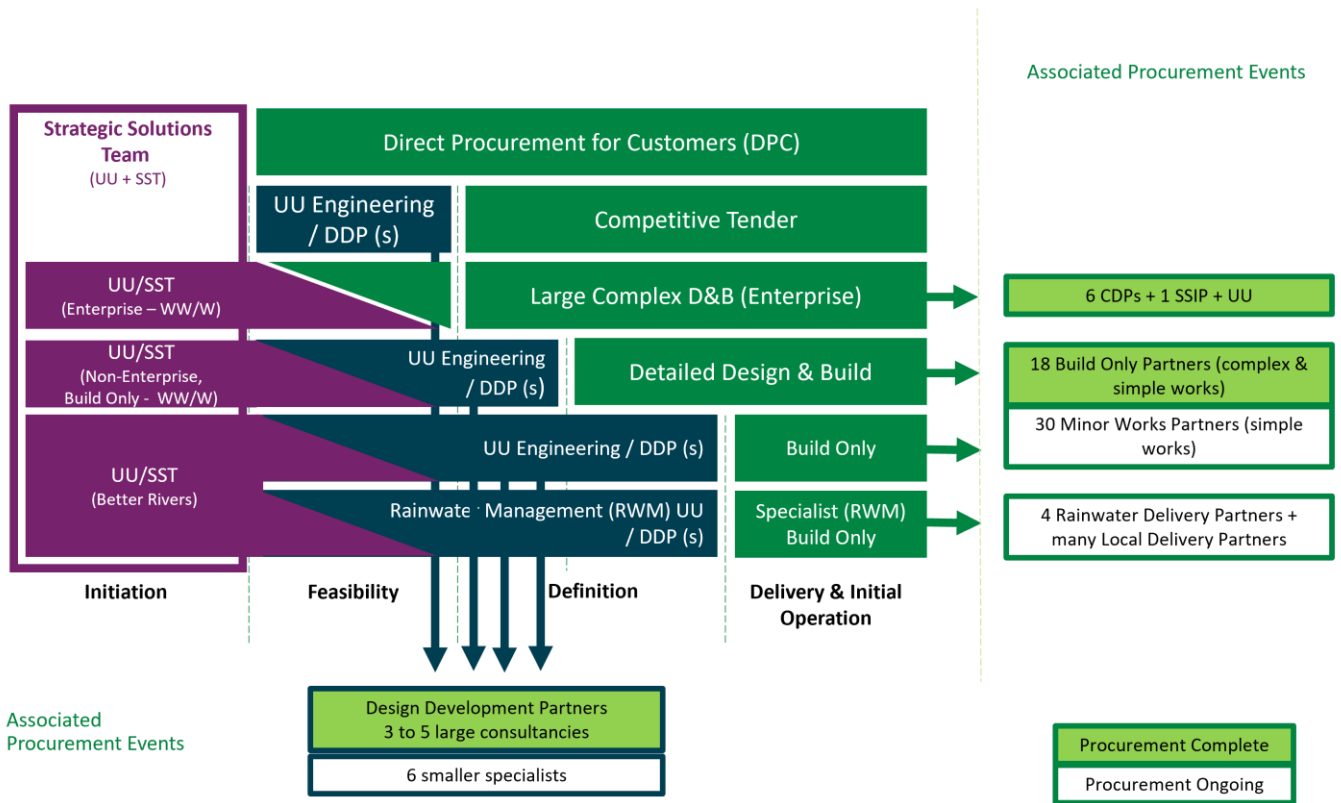
United Utilities has successfully awarded 18 Detailed Design and Build partners to deliver circa £2.7bn of programme, with projects ranging in value from circa £2m at the lower end and circa £20m at the upper. Ten of those partners are specialists in delivering storm overflows projects, so will focus on that element of our programme, whereas eight have excellent process treatment capability so will focus on upgrades to our water and wastewater treatment facilities. We attracted a mix of national and local suppliers demonstrating the success of our engagement with the supply chain during the procurement process in attracting and securing the right mix of capability and capacity required to deliver our stretching programme.

In AMP7 we predominantly used a single design partner to supplement our in-house engineering team. In AMP8 we recognise the need to fundamentally change our model and scale up our design capacity, and so our operating model involved appointing 2 SST's who are large global strategic engineering design consultants who take responsibility for identifying best value solutions and optimising our entire programme.

We also recognise that access to design resource will be critical to ensure that designs can be produced in at the scale needed to keep up with demand and as such we will procure nine Design Development Partners (DDPs) who can develop those designs in a highly productive, efficient and standardised way. We have already awarded contracts to 3 large design partners and throughout the procurement process emphasis was placed on access to resources and capacity, both in the UK but also including global capacity which can be tapped into through off-shore design centres. Our new design partners (Motts, Stantec and Atkins) have significant presence in the UK, but also have significant off shore design capability. Across the three design partners United Utilities has access to circa 1500 skilled specialist resources in India, Bulgaria and Spain.

The 'Minor Works' tender is underway and is due to awarded in Autumn 2024, this will provide access to up to 30 smaller, specialist contractors; 20 civil engineering specialists, and 10 mechanical and electrical contractors across the region available to service high volume small value delivery requirements. In this approach we have tested bidders on geographical areas of operation to promote use of smaller, local organisations within our regions. Where appropriate we intend to allocate work within county areas currently serviced by them in line with the five counties model.

Figure 4: UUW AMP8 Delivery Model



Source: United Utilities AMP8 Programme

Figure 5: A complete procurement schedule showing progress against all activity to appoint partners to support delivery of the AMP8 capital programme

| Nov-23 | Dec-23 | Jan-24 | Feb-24 | Mar-24 | Apr-24 | May-24 | Jun-24 | July-24 | Aug-24 | Sep-24 | Oct-24 | Nov-24 | Dec-24 | Jan-25 | Feb-25 | Mar-25 | Procurement Status |
|---|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|--------|--------|------------------|---|------------------------------------|
| Construction Delivery Partners (CDP) | | | | | | | | 100% | | | | | | | | | Completed |
| Detailed Design & Build | | | | | | | | 100% | | | | | | | | | Completed |
| Build Only & Minor Works | | | | | | | | | 84% | | | | | | | 84% Complete – Expected 15 th October 2024 | |
| Rainwater Management | | | | | | | | | | | | 84% | | | | 84% Complete – Expected Q1 2025 | |
| Design Development Partners (DDPs) | | | | | | | | 100% | | | | | | | | Completed | |
| Specialist Design Development Partners (DDPs) | | | | | | | | | 78% | | | | | | | 78% Complete – Expected 18 th October 2024 | |
| Network Modelling | | | | | | | | | 83% | | | | | | | 83% Complete – Expected 21 st October 2024 | |
| Specialist Modelling | | | | | | | | 44% | | | | | | | Expected Q1 2025 | | |
| | | | | | | | | | | 47% | | | | | | Commercial, PM, & Estimating | 47% Complete – Expected March 2025 |
| | | | | | | | | | | | | | | | | Service Reservoirs | Expected Q1 2025 |
| | | | | | | | | | | | | | | | | Bore Holes | Expected Q1 2025 |
| | | | | | | | | | | | | | | | | Commercial Low Value/High Volume | Expected Q1 2025 |

Source: United Utilities AMP8 Programme

New Partner Capability and Capacity Reviews

Whilst the capabilities and capacity of all bidders was tested throughout the procurement process itself, immediately after the successful new partners were appointed, we felt it vital to perform a more detailed assessment. This included individual partner capabilities and preferences, their realistic and sustainable levels of capacity available immediately to UU in Year 1, and their growth aspirations over AMP8 into AMP9. This exercise has already commenced and has taken the form of individual workshops with each partner which have covered the following detailed considerations:

- Partner capabilities relative to the various work types that will be delivered in AMP8. This includes ranking current capability from 1 (strong self-delivery capability) to 5 (no in-house capability and no access to subcontract capability).
- Which parts of our region the partners could service
- What design capabilities each partner has (through in-house design resource or through design partners) and what their preferences were in regards the level of design definition would be required for them to assume design and construction responsibilities.
- Each partners' level of commissioning capability, allowing us to form a view of which partners may require additional commissioning support.
- The approximate project value ranges each partner preferred to be allocated.
- What each partner's existing and available capacity levels are (nationwide and North-West), and what their desired levels of turnover are for each year over the course of the AMP8 period. This will be frequently revisited but allowed us to confirm that we have sufficient capacity and capability to deliver our AMP8 programme.

The outputs from these workshops have allowed us to create a capability and capacity matrix which will inform work allocation to partners but more importantly has also enabled us to confirm that there are no 'hot spots' of no/limited capability within the programme and that we have secured sufficient capability, expertise and capacity across the breadth of our AMP8 programme.

Strategic Solutions Team (formerly referred to as Strategic Solutions Identification) Partners

In January and February 2024 respectively, Tetra Tech/RPS and Jacobs were awarded contracts for AMP8 & 9 and joined United Utilities to form our Strategic Solution Team (SST), both of whom will form a critical role in driving programme efficiency. One partner (Jacobs) will be focussing on optimising the programme and undertaking high level solution development for our large-scale process treatment projects at our water and wastewater treatment sites. The other partner (Tetra Tech/RPS) will specifically focus on delivering high volume, innovative solutions for our storm overflows programme, including blue/green and hybrid schemes. Both partners will work collaboratively to understand the interdependencies between requirements and where outcomes should be met in an integrated way.

Both partners are working with United Utilities to baseline the AMP8 programme and are optimising the programme to meet regulatory delivery dates, flatten the whole supply chain resource curve to better manage resources and identify areas for optimisation. At a portfolio level, the SST have adopted an approach aligned to the Management of Portfolios definition and delivery cycles. At the programme level this allows for understanding of requirements and categorisation, and for the whole portfolio to be balanced and prioritised to deliver solutions that are affordable and timely.

The baseline programme has been used to identify delivery peaks that can be smoothed to improve deliverability. Ways in which we are doing this include;

- Grouping together projects into programmes of work with similar solutions which will in addition drive efficiency in stakeholder engagement, solution optioneering and design, procurement and delivery. This is already being deployed in the deployment of holistic requirements in Nether Kellet and Over Kellet WWTW catchments.
- Releasing work to be delivered by a single team that can develop solutions for multiple and interdependent requirements for example creating a dedicated team with operational and process expertise who can explore opportunities to maximise existing asset capacity. For example, for the Southport overflow requirement, we have optimised existing storage in the pumped network upstream leading to 1,000 m3 capacity being realised.
- Targeting programmatic work packages to reduce pre-construction risks, including planning, ecology, third party services, flow and load and sampling activity.

The Project Delivery Workflow has been streamlined with both SSTs, enabling early Rapid Options Assessment and solution categorisation to focus effort on options to be appraised for best value. The options refinement within the workflow enables us to reach a single, optimal, best value solution in the quickest time possible, whilst understanding and mitigating key project and programme risks where necessary.

A further example of harnessing digital optimisation to deliver efficiency is being deployed by Jacobs in the deployment of the Hybrid Optimizer Digital Twin tool which is designed to extract the most value from existing data by offering soft sensors and process intelligence throughout the plant. It will be used to generate two years of dynamic 15-minute crude sewage concentration, fractionation, and activated sludge kinetic data for use during the design and evaluation of phosphorus removal at a major WwTW. This technology will explore opportunities to intensify existing processes and potentially reduce the number of assets that need to be constructed.

United Utilities has also adopted the principles of the Get It Right Initiative¹ to create a delivery culture that gets it right from the start, and engages all stakeholders in eliminating error from inception to completion. We have implemented a robust design approach and hold regular constructability reviews (4d modelling) with construction, operational and maintenance teams to improve all aspects of the design. These reviews are digital rehearsals, often using virtual reality technology, which bring delivery teams together to develop design solutions collaboratively, providing opportunities to share of ideas between teams through the various scheme development lifecycle.

Enterprise Model

Within our 'runway approach' United Utilities described our approach to delivering large complex design and build projects, where we will engage our SST early with our Construction Delivery Partners (CDP) to identify innovative solutions that can be delivered through an Enterprise agreement.

Enterprise delivery models are identified as best practice for the delivery of large and complex infrastructure programmes of work. Evidence suggests they are best set-up in line with the principles of the Institution of Civil Engineers' Project 13, and are widely used across the water, nuclear, highways and rail sectors. The benefits of moving to an Enterprise way of working are set out in the Institution of Civil Engineers' 'From Transactions to Enterprises' report²

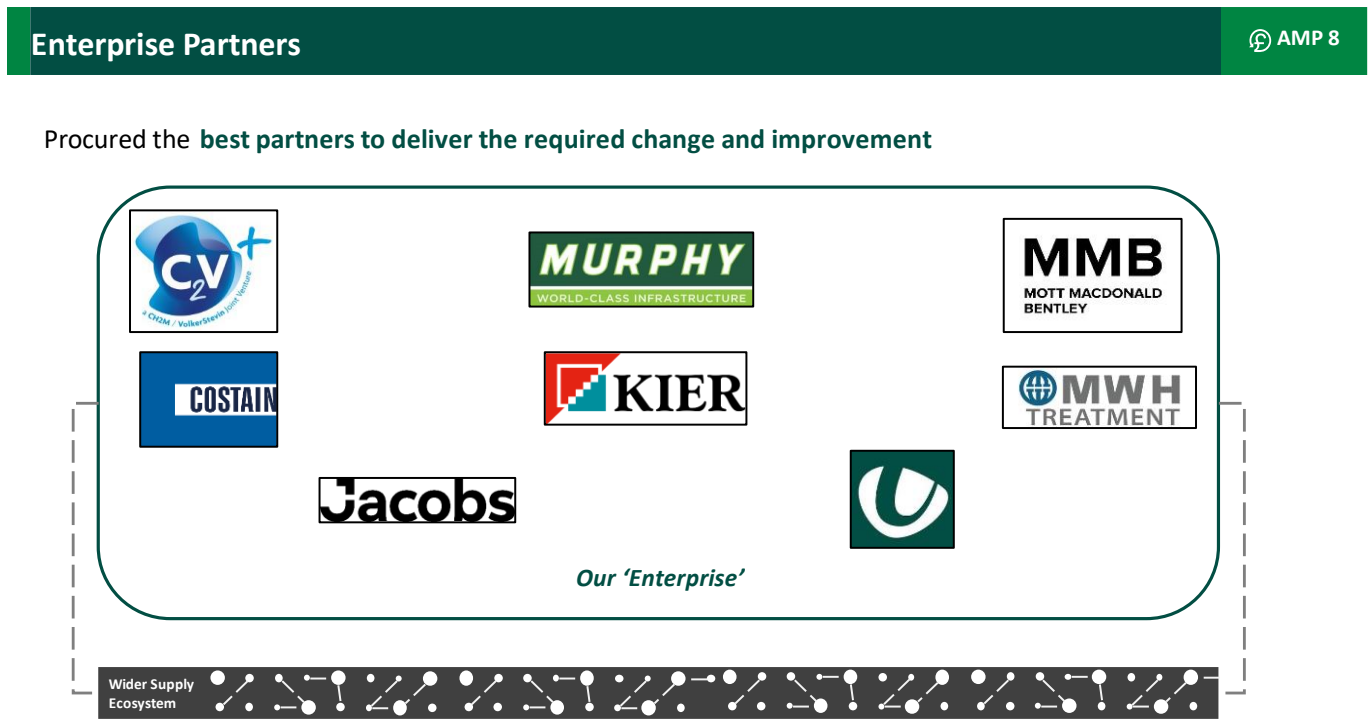
United Utilities has successfully appointed an Enterprise Director experienced in leading these types of models in other sectors. The Enterprise has now been mobilised and is already working on solutions for our schemes. The Enterprise was formally launched³ on 1st July.

¹ <https://getitright.uk.com/>

² https://www.ice.org.uk/media/jikn5bxo/ice_report_v6_22_03_17_pages_digital.pdf

³ <https://www.unitedutilities.com/corporate/newsroom/latest-news/united-utilities-lines-up-partners-for-record-investment-proposals/>

Figure 6: Enterprise partners awarded by UUW



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Source: Slide from UUW Enterprise Mobilisation Pack

The Enterprise will deliver circa 45% of UU capital programme in AMP8. This includes critical large schemes such as Davyhulme WWTW (to remove phosphorous and sanitary parameter improvements), Salford and Eccles (both of which are refurbishment of wastewater treatment plant to achieve new waste water quality consents) which were previously anticipated to be delivered as Direct Procurement for Customer schemes or via individual Competitive Tenders.

After careful consideration United Utilities has now determined these delivery approaches would not have allowed us to meet our regulatory commitment dates due to the lengthy and sequential nature of the design, procurement and construction phases in those models. We have therefore determined that the Enterprise delivery runway is the best option for delivering these projects on-time and within budget and are confident that our Enterprise partners (shown in Figure 6 above) have both the capability and capacity to deliver projects of this scale and nature (our risk heatmap detailing delivery route assessment of these schemes is provided in Figure 7 below). Early works have already started to safeguard delivery and achieve the regulatory commitment dates for a number of critical projects.

We have allocated schemes from our Transition Investment Programme to the Enterprise, who are now developing an AMP8 Delivery Programme. There are four schemes (Askam-in-Furness, Lancaster (Stodday), Partington and Southport with regulatory commitments in 2026, which we have identified for delivery by the Enterprise due to the need for an accelerated delivery timeframe. These schemes are now being developed by our Enterprise Partners with detailed design programmed to commence Q4 2024 and on-site delivery starting Q1 and Q2 2025.

The Enterprise has been procured with a commercial model that collectively incentivises all partners of the Enterprise to work together with UU to successfully deliver outcomes within the final determination, with risk and reward shared between UU and Enterprise partners, with the intent being to create outperformance savings which can be shared with customers.

Optimum solutions and wider benefits are best realised on early appointment for full scope, enabling programme-level optimisation of resources and repeatable standard solutions. As well as providing best value, the Enterprise is incentivised to achieve wider organisation, societal and environmental outcomes to leave positive longer-term benefits. Our focus on improving productivity, delivering high-quality outcomes and

achieving capital savings requires us to progress works with an accelerated timeline, and most importantly, early commitment and full engagement from all parties, which the Enterprise model both enables and supports.

Risk Management

DPC Projects

United Utilities was the first UK Water company to deploy a Direct Procurement for Customers project in our ground breaking Haweswater Aqueduct Resilience Project (HARP). Based on our hands on experience from the HARP project we have determined that the lengthy nature of the pre-contract development and procurement phases under a DPC model would cause significant risk to delivery date for those projects previously identified for delivery via this route (for example Salford and Eccles). The impact of the delay would mean it would not be possible to achieve the regulatory commitment dates associated with these projects.

For this reason, in the heatmap (see Figure 7) United Utilities reassessed supply chain capacity and capability as high risk. As a mitigation to ensure we can meet regulatory commitments, United Utilities has reallocated those projects to the Enterprise delivery runway. We consider this route to market to be the most effective as the delivery partners have been appointed, and we are confident that the Enterprise has sufficient capacity and capability to deliver those projects, within budget and by the regulatory commitment dates.

We have, however proposed one Water Trading project for DPC delivery as the nature of this project and anticipated schedule is very well suited to the DPC approach. Further information can be found in [UUWR 40 Water Trading](#).

Large project competitively tendered projects

Based on experience from previously competitively tendered large projects (e.g. Blackburn WwTW, Davyhulme, Oldham), United Utilities has deemed it would not be possible to achieve the regulatory commitment dates for the projects previously identified as being suitable for open market competition via a competitively tendered procurement. This is because of the sequential nature of the pre-contract development, procurement and delivery phases which are not compatible with early contractor involvement strategies. In our experience, engaging with suppliers throughout the process allows for more successful integrated solutions and are critical to quality, on time delivery of projects.

United Utilities extensive market engagement and risk management strategies also strongly suggest that there is a risk that if an open market competition is adopted for the very large non-DPC projects the procurement process may not deliver a successful supply chain outcome. This is because either the procurement process may not attract sufficient interest from an already saturated construction market or; in order to appoint a contractor in a very competitive market, United Utilities may be compelled to accept a greater level of risk (for example a fully cost reimbursable commercial model) than we have already secured through our new runway model.

For this reason, supply chain capacity and capability has been designated red as high risk for competitively tendered large projects, and instead, United Utilities has allocated those projects to the Enterprise delivery runway. Again, we consider this route to market to be the most effective as we area already have contract terms agreed and we are confident in the capability and capacity of the Enterprise to deliver those projects, within budget and by the regulatory commitment dates.

Enterprise delivery organisation for large complex projects

We have now successfully completed the procurement to appoint our new partners into our Enterprise delivery organisation, which will delivery our largest, most complex projects. We are delighted with the outcome of the process and have successfully appointed 6 of the best and largest expert design and build organisations from across Europe, and one the largest global expert engineering design consultancies, who are incentivised to work together with each other and United Utilities, to deliver our AMP8 outcomes, on-time and within our final determination, and they will share in the risk and reward of savings and cost overruns. The Enterprise partners are detailed in the section above.

The Enterprise's programme was originally envisaged to be comprised of c.100 – 130 projects of up £75m in value, with larger projects designated for either DPC or competitively tendered delivery. However, as the procurement has progressed, and the identities, capabilities and capacity of the partners has become known, we

have been able to determine that the Enterprise partners have excellent capability and capacity to deliver projects of the highest complexity and value.

As we have also identified that adopting a DPC or competitively tendered approach posed a significant deliverability risk which we propose will be mitigated by utilising the Enterprise delivery route instead, we have adjusted our view on the programme of work to be designated to the Enterprise, resulting in a programme of much lower individual numbers of projects (circa 40) but which includes projects of much higher value (c.£350m) and complexity. The projects of lower complexity that were previously identified for Enterprise delivery but which no longer form part of its programme, will now be delivered via our detailed design and build runway, the 18 construction partners for which have now also been appointed, and who again we are confident are in a strong position to deliver this element of the programme as they represent the finest organisations from across the UK and bring an excellent mix of capability and also significant capacity levels for delivery.

A major benefit of the adopting the Enterprise for delivering these projects is that it allows us to commence work on those projects immediately and, in fact we have already engaged the new partners in an early contractor involvement approach to start work developing the designs, planning enabling works, critical procurement, and construction works. This would not be possible under a more traditional competitive tender procurement approach, or DPC, and we are confident that delivering these projects via the Enterprise gives us assurance that they will be delivered on-time and within budget, as opposed to the original delivery strategies proposed.

General risk mitigation – Early Contractor Involvement (applicable to all runways)

Successfully procuring our new design (5 in total so far including SST and DDP partners) and construction partners (24 in total so far) gives us the benefit that we can engage those new partners early to mitigate risk to delivering the AMP8 programme by our commitment dates. This allows to us to optimise and smooth out the programme, to allow a much more sustainable and achievable delivery profile which can be started now, as opposed to an unsustainable ramp up to an unachievable peak demand towards the middle or end of AMP8, which would present increased delivery risk.

All new contracts adopt NEC4 industry best practice terms and conditions, each one with the option for to engage construction partners under an early contractor involvement approach which allows United Utilities to seek their expertise and input earlier in the design process. This promotes earlier risk identification and mitigation strategies, which in turn reduces construction and schedule risk and unlocks much earlier outcome delivery than would otherwise have been possible. Early contractor involvement is a key risk mitigation strategy which will be adopted as standard practice (where needed) across our capital programme.

Table 1: A summary of the revised programme showing the indicative number and value of projects along and total anticipated value per delivery route as per the WINEP July 2024

| Programme type | Number of projects | Indicative project value | Total anticipated programme value |
|---|--------------------|--------------------------|-----------------------------------|
| DPC* | 1 | >£200m | £350m |
| Very Large Non-DPC | - | - | - |
| Complex D&B Infra (Enterprise) | c.10 | £10m - £100m | c.£600m |
| Complex D&B Non-Infra (Enterprise) | c.30 | £10m - £350m | c.£2,250m |
| D&B Infra | c.350 | £2m - £25m | c.£2,100m |
| D&B Non-Infra | c.100 | £2m - £25m | c.£600m |
| Build-only | c.200 | <£3m | c.£350m |
| Rainwater Management incl Nature Based Solution | 1000+ | TBC | c.£300m |

*Does not include the Haweswater Resilience Aqueduct Project HARP (DPC scheme)

Source: UUW programme build

Figure 7: UW Supply chain heatmap assessment of programme risk

| Supply Chain (risk map August 2024) | | | | | | | | | | | |
|---|------------------------------------|-----------------|-----------------------------|--------------------------------------|-------------------------------------|--|------------------------------|--------------------------------|--|------------------------------|--------------------------------|
| | | | | | | Previous | | | August 2024 position | | |
| Workstream | Delivery model | AMP7 spend (£m) | AMP8 anticipated spend (£m) | Incumbent supply chain turnover (£m) | AMP8 PIN respondents' turnover (£m) | Supply chain (capacity and capability) | UW (capacity and capability) | Attractiveness to Supply Chain | Supply chain (capacity and capability) | UW (capacity and capability) | Attractiveness to Supply Chain |
| Direct Procurement for Customers | Large tier 1 & financier | 1700* | TBC | DPC Competitive Tender | DPC Competitive Tender | Yellow | Yellow | Yellow | Red | Yellow | Yellow |
| Non DPC "special" projects (>£100m) (includes Wastewater non-infra treatment works upgrades- complex projects) | Large Tier 1 Competitive Tender | 450 | <£50m | Competitive Tender | Competitive Tender | Yellow | Green | Yellow | Red | Green | Yellow |
| Large, complex Design & build delivery (Enterprise) (includes water and waste complex projects; infra and non-infra) | Large Tier 1 | 1,000 | 3000 | 4,325 | 18,877 | Yellow | Green | Green | Green | Green | Green |
| Detailed D&B / build-only delivery (includes water and waste, non-infra, low complexity projects) | Tier 2 & 3 | 100 | 1000 | 1,339 | 2,202 | Red | Yellow | Green | Green | Yellow | Green |
| CSO Grey solutions (includes waste infra, low complexity projects) | Tier 1,2&3 | 100 | 2,000 | 5,664 | 21,079 | Red | Yellow | Green | Green | Yellow | Green |
| CSO Green solutions (includes waste infra nature based solutions/ rainwater management solutions) | Specialist NBS contractors | 20 | 500 | 737 | 2,075 | Red | Red | Yellow | Yellow | Yellow | Yellow |
| Maintenance infrastructure | Tier 2 & 3 | 500 | 1052 | 1,070 | 1,452 | Green | Green | Green | Green | Green | Green |
| Maintenance non-infrastructure | Model dependant | 500 | 528 | 1,339 | 1,339 | Green | Green | Green | Green | Green | Green |
| Bio-projects | Tier 1 & 2 | 200 | 200 | 1,070 | 1,070 | Green | Green | Green | Green | Green | Green |

Source: UW Supply chain

* Full value reflects full project estimate for completion

Figure 7 above presents an updated heatmap demonstrating an assessment of programme risk from October 2023 compared to an August 2024 position. The changes presented are summarised below:

Direct Procurement assessment vs August

UU deems that, based on experience from the HARP project, it would not be possible to achieve the regulatory commitment dates for the four projects previously nominated for DPC delivery, if the DPC model is adopted. This is because of the lengthy nature of the pre-contract development and procurement phases under this approach. For this reason, supply chain capacity and capability has been designated red as high risk, and instead, UU have allocated those projects to the Enterprise delivery runway, which has now been procurement sufficient capacity and the capability to deliver those projects, within budget and by the regulatory commitment dates.

Non DPC “special projects” (> £100m) assessment vs August

UU deem that, based on experience from previously competitively tendered large projects (eg Blackburn WwTW, Davyhulme, Oldham), it would not be possible to achieve the regulatory commitment dates for the for projects previously identified as being suitable for open market competition, if a competitively tendered procurement approach is adopted. This is because of the sequential nature of the pre-contract development, procurement and delivery phases under this approach, which are not compatible with early contractor involvement strategies which is a critical time risk mitigation approach. Also based on previous experience, there is a risk that if an open market competition is adopted for the very large non-DPC projects, the procurement process may either 1.) not attract sufficient interest from an already saturated construction market, and may therefore not deliver a successful outcome, or 2.) UU would be pressured due to lack of options into accepting a greater level of risk (for example a fully cost reimbursable commercial model) than we have already secured through our new runway model, in order to appoint a contractor. For this reason, supply chain capacity & capability has been designated red as high risk, and instead, UU have allocated those projects to the Enterprise delivery runway, which has now been procured, and which has sufficient capacity and the capability to deliver those projects, within budget and by the regulatory commitment dates.

Detailed D&B / build-only delivery assessment vs August

Supply chain (capacity and capability) has been adjusted to green on the assumption that we receive a realistic and achievable determination.

CSO Grey solutions

Supply chain (capacity and capability) has been adjusted to green on the assumption that we receive a realistic and achievable determination.

External Assurance

To support the development and deployment of our plan United Utilities continues to promote a culture of independent challenge, this ensures we stay abreast of industry best practice and builds confidence in the deliverability of our plans.

As an example, United Utilities appointed ChandlerKBS to conduct a cost assurance benchmarking exercise on a sample of projects across the entire programme (including storm overflows, Wastewater treatment, bioresources and water treatment). ChandlerKBS are an international commercial company who have provided specialist cost intelligence and estimating services to several UK infrastructure businesses, including several water companies. Costs are benchmarked utilising their Cost Intelligence database (CID) which contains data derived from various clients over a 20-year period.

We are reassured that this cost assurance exercise revealed only a +3% variance between United Utilities estimated costs and the ChandlerKBS CID benchmarked costs. Whilst we recognise that this is a small sample of our overall capital programme, the sample was selected to have a wide range of project types, including storm overflows, water, wastewater and bio-resources, and therefore we can be satisfied this outcome demonstrates a close correlation in anticipated costs.

To support the United Utilities Executive in assuring that the business will be ready to deliver the AMP8 programme, we are establishing an AMP8 Expert Assurance Panel (EAP) to provide additional insight and experience. The Panel will be comprised of experts from a range of industries and professional capabilities and its

role will be to give challenge and guidance on our plans and will be focussed on organisational readiness and the implementation of our target operating model across the business.

The EAP will consider and provide insight on, the approach to United Utilities mobilisation plan, assurance that we are ready to deliver the scale of capital works and provide recommendations, risks and mitigations. Candidate assessment is already underway, and we expect the EAP to be in place by early Autumn 2024 with a series of multi-day deep dive workshops across the key themes to be arranged as part of the initial review.

Key supply chain risks and capacity constraints, such as the availability of specialist resource or components

Asset Standardisation

By standardising solutions and components, we can quicken project lifecycles and improve overall quality, as our teams can embed lessons learned and refine methodologies. In our PR24 business plan (*JUW47 Deliverability, Chapter 8, page 40*), we recognised the critical need to work collaboratively with our supply chain to develop standardised designs and sourcing routes to aid the deliverability of the AMP8 plan. By enabling standardisation, we can drive faster and more efficient delivery of the programme by facilitating reduced design and installation time compared to bespoke design and manufacture, both for United Utilities and our supply chain

We have formed Project Blueprint as a dedicated team to develop an industrialised, standard approach to the design, delivery, and procurement of assets to enable efficient AMP8 delivery. Blueprint has developed a robust and data-driven methodology in collaboration with the Manufacturing Technology Centre (MTC) and has delivered 5 priority standard assets critical for delivery of our Better Rivers, CSO solutions. Standardisation has so far realised savings of over 70% in design time, and over 10% in procurement costs and we are now more than half way through the process of standardisation for 10 more priority assets for AMP8.

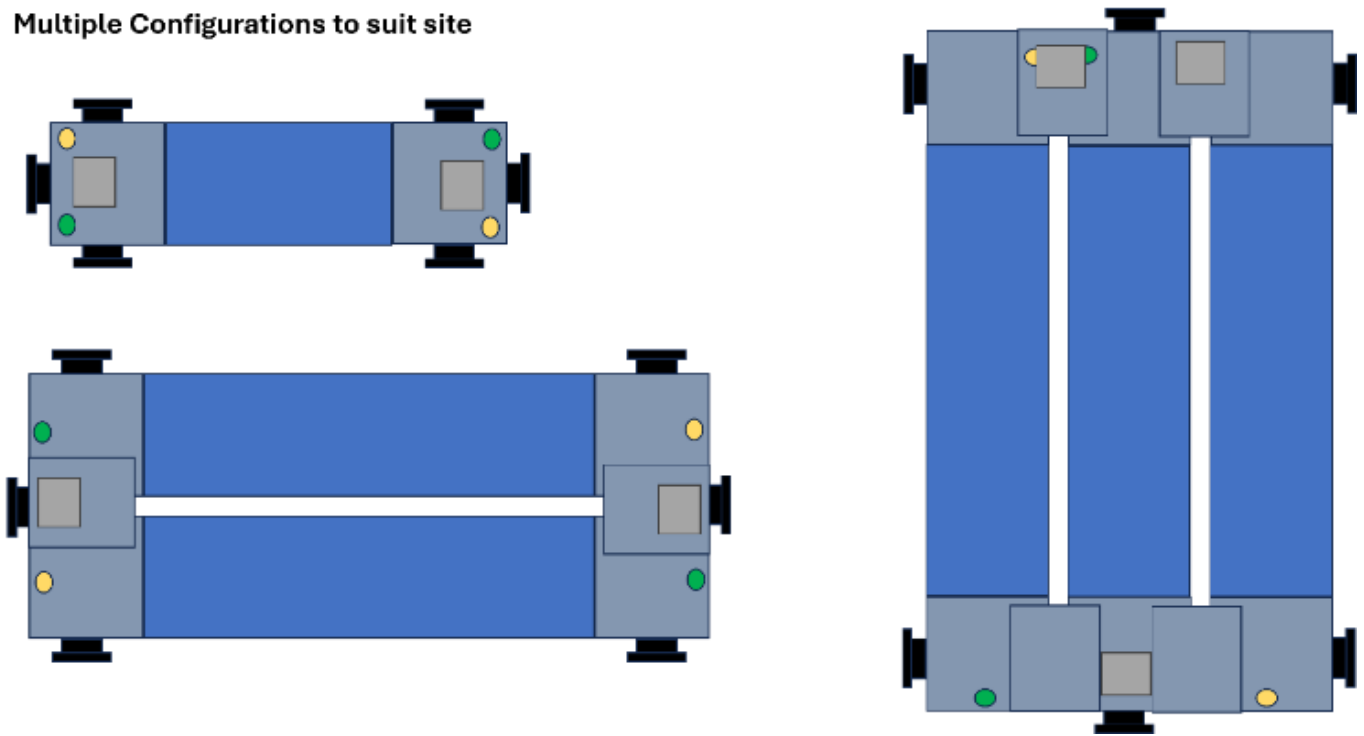
Case Study Project Blueprint Phase 1 – Detention tanks and Return Pumps

Assets critical for the delivery of the Better Rivers CSO programme include screens, detention tanks and their return pumps. By assessing the programme data, we estimated there to be a requirement to deliver over 400 of these assets, highlighting the imperative need for standardisation in cases of high-volume assets to produce repeatable and reliable designs and enable efficient programme delivery.

Detailed market engagement revealed an innovative standard solution to deploying varying volumes of detention tanks. A modular pipe array system (see Figure 8) means that projects can adopt a flexible and configurable 'plug-and-play' arrangement utilising standard fixed diameter pipes with varying lengths. The pipes can be easily manufactured creating efficiency within the supply chain and subsequently reducing lead times on items. Blueprint has also worked with the supply chain to select sizes which allow for simple transportation, reducing the time and cost associated with installation.

Figure 8: Schematic of a modular pipe array detention tank system

Multiple Configurations to suit site



Early engagement with a supply chain partner also meant that we were able to adopt their existing range of standard Concertor pump models (Figure 9) for use as a return pump within the detention tank. By selecting this market-ready standard product, we estimate to have saved over 10,000 hours in design time and were able to secure an additional 36% bulk discount (£1 million) on framework prices by placing advanced volume commitment. The Concertor pump also offers a range of operational and maintenance benefits including adjustable duty and blockage sensors. In fact, through comparison to a bespoke pump design, we estimate a saving of 46% in operational carbon through use of the standard Concertor pump.

Figure 9: Xylem Flygt Concertor pump models



Critical Components - Smart Meters

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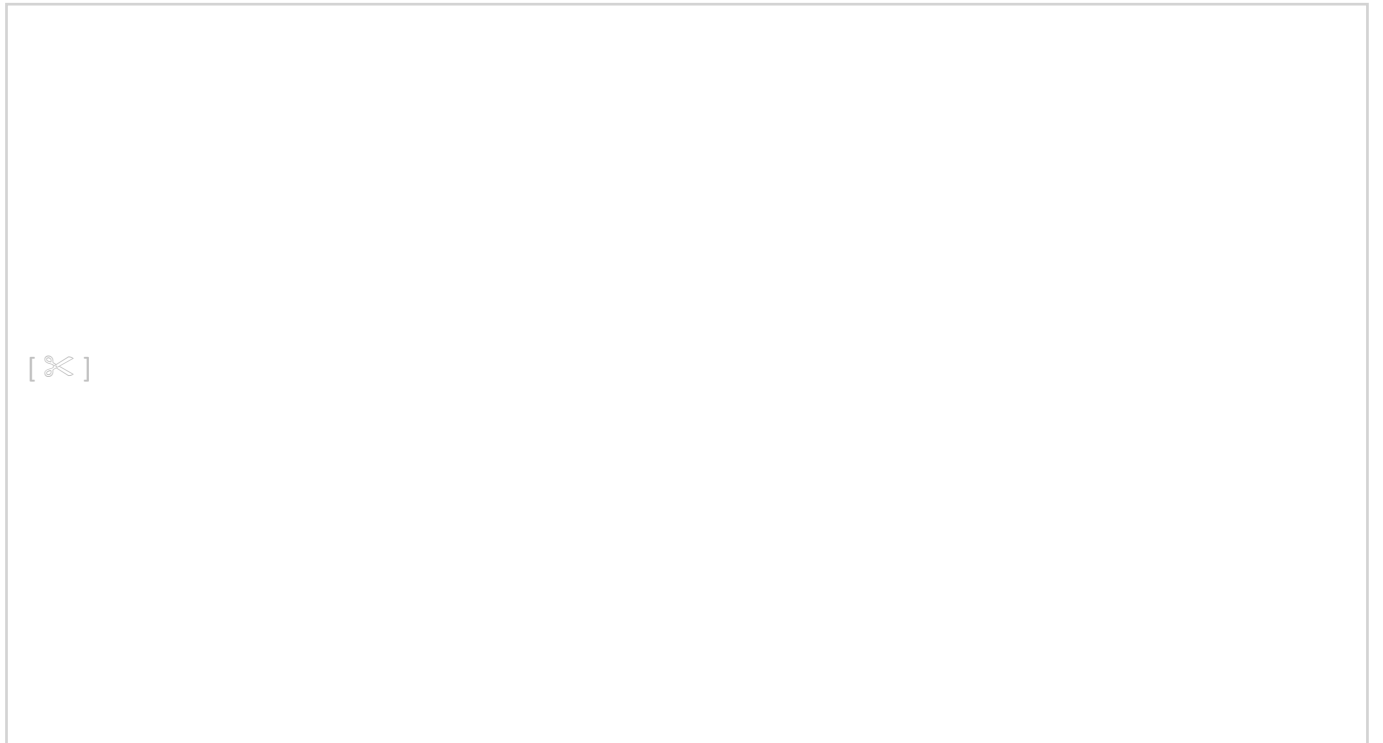
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Advanced WINEP – learning from our accelerated funding

In late 2024 United Utilities launched a new Rainwater Management function and created a specialist team of from various backgrounds, focused on the design and delivery of Rainwater Management solutions such as Sustainable Drainage (SuDS), Nature Based Solutions (NBS) and Surface Water Disconnections. We are expanding our internal teams in preparation for the start of the AMP across the business, including Project Managers, Technical Leads Third Party Coordinators and commercial resources to lead on the large number of partnership agreements we are expecting to need in delivering this programme.

We are currently in tender for multiple specialist Rainwater Management design partners and delivery partners to progress the many interventions planned for AMP8. We plan to make significant strides in AMP8 and grow the local green/blue capabilities across the North West supply chain, challenging traditional approaches to delivery and overcoming multiple barriers.

We have seen the team collaborate with Design Partners already on c50 Hybrid projects from the accelerated WINEP programme with some scheduled for delivery in late 2024. During this thousands of surveys have completed across multiple catchments, and some designs have been shared at public exhibition, including those at Near Sawrey in the Lake District where we will work the National Trust.

Figure 10 below showing location of Rainwater management interventions in Sawrey, as shared as part of our public consultation on the scheme

Figure 10: Rainwater management interventions in Sawrey



Source: United Utilities Public Consultation Information – Sawrey Scheme

The early investment from Advanced WINEP programmes has enabled the ramping up of Rainwater Management projects earlier. We have begun feasibility, modelling and early stages of design of our Advanced WINEP Rainwater Management Programme; this will unlock earlier, innovative investment and partnerships on rainwater

management and storm overflows. We have been able to run multiple catchments through an innovative modelling software called Optimatics, which will help us prioritise locations of highest benefit across large catchments by running thousands of solutions and using Artificial Intelligence to make decisions.

As well as providing the highest areas of benefit through modelling, the early work in strategic planning is producing a flatter AMP8 delivery profile and therefore a more deliverable programme overall. The funding has also enabled us to accelerate conversations with strategic partners across the region, including councils in Greater Manchester such as Oldham, exploring the regeneration opportunities in their town centre and processes needed to implement blue/green infrastructure jointly.

The successful application for Advanced WINEP in draft determination provides an early opportunity for United Utilities to secure and invest in the required further resources with confidence, ahead of AMP8. It also provides a very strong foundation for further investment of this type in AMP9.

Accelerated Infrastructure Delivery – Learning from our Overflows programme

United Utilities has progressed with 152 of the funded projects as part of the Accelerated, Windermere and Bathing Waters designated scope. As at end July 2024 all initial designs have been completed and 103 of 152 hydraulic models have been produced to enable progression to the detailed design phase. A total of 36 projects have commenced construction and we are targeting a further 60 schemes to move into the Construction phase by March 2025. We are planning for an additional 200 schemes to commence construction in the first year of AMP8 split across the 5 counties.

Standardisation and modularisation form a large part of the efficient delivery of schemes, and we have trialled a series of options in preparation for implementation at scale across the programme. The case study above and other Project Blueprint outcomes provides template products within a series of typical solutions coupled with a modularised Design for Manufacturing and Assembly (DfMA) delivery concept. This supports delivery of speedy cost-effective solutions and facilitates regional and scale flexibility to be able to deliver at large scale across all 5 counties.

Innovation

We are continuing to mitigate against deliverability risk by testing and deploying innovative technologies to support critical delivery areas. For example, our Alternative approached to Phosphorus removal project (ALT-P, Ofwat Innovation Funded) has proven the capability of alternative methods of phosphorus removal for Waste Water Treatment Works moving us away from dependency on fossil fuel based chemical coagulants which are carbon intensive but have also experienced risks with supply volumes and quality due to increasing demand.

We have demonstrated the use of electrocoagulation, natural coagulants and reactive media to achieve reduced phosphorus concentrations and have shared this across the water industry to help others achieve their water quality and environmental goals. Other water companies including Severn Trent Water and Yorkshire Water have moved forward with solutions from the ALT-P project. At United Utilities we have led the way in gaining national Environment Agency and Natural England approval for use of natural coagulants for use at our wastewater treatment plants.

We have delivered other chemical free solutions such as Fujiclean (see UW49 – Innovation framework and strategy), a small-scale solution which will enable a move away from chemical use at small waste water treatment works. We are moving this solution into implementation in our early programme and our SSIP's are actively seeking opportunities to deploy this solution at scale.

We have now delivered our 3D print hub at Wigan WwTW under the 'Water Industry PrintInfrastructure' (WIP, Ofwat Innovation Funded) project and proven the capability of digital design and construction to widen our delivery capabilities and support supply chain constraints around specific repeatable assets. These include combined sewer overflow chambers in support of our Storm Overflows programme) programme and bespoke designed polymer instrumentation vessels for use at the 8000 river water monitoring locations across our region.

Our 3D concrete printing demonstration has also supported our Industrial Emissions Directive (IED) programme in the provision of retaining walls for containment of potential large-scale spills at our bioresources sites. By printing these assets, we estimate a 10 times reduction in embedded carbon when compared to our standard concrete

block based solution. All aspects of our 3D printing programme have been shared with the wider water industry as a means of supporting others to achieve their environmental improvement challenges.

5. Impact of Draft Determination

United Utilities deliverability assurance was assessed against the business plan submitted in October 2023. This deliverability strategy remains valid and as demonstrated through this narrative, United Utilities has continued to build capability and capacity (as evidenced in section 4). However, its draft determination Ofwat has presented significant cost efficiency challenges related to enhancement cases which has led United Utilities to reassess whether the plan remains deliverable within a reduced totex expenditure allowance.

United Utilities total expenditure allowance as per the draft determination response is £12.376bn against a plan of £14.790bn submitted in January 2024 (equating to a 16% reduction overall). Ofwat has increased the allowance on base costs by 1% but made a reduction on enhancement costs an average of 35%. (*PR24 Draft Determinations: Total expenditure allowances – by company, Page 44*).

There are at least 3 areas where proposed reductions in enhancement funding present a significant risk to deliverability. The largest efficiency has been applied to Wastewater Enhancement costs with an overall reduction of £2.144bn. Of this £1.498bn relates to Storm Overflow costs (£3.289bn vs £1.792bn). Bioresources has seen a substantial efficiency challenge against several areas with the IED programme and potential future risk regarding land bank for biosolids presenting the biggest deliverability impacts. The introduction of a gated process for large scale infrastructure schemes and the costs associated with these large schemes, are also of concern.

We have summarised the deliverability impact of Ofwat's draft determination response on those programmes below. United Utilities representation contains multiple other responses concerning performance/cost impacts which are detailed within the wider report but are not referred to here as they have less relevance/impact to deliverability of the programme.

Gated Process and Large Schemes

Application of the large scheme gated process to certain WINEP schemes presents significant delivery risk as it would compromise the Enterprise model set out in section 4. This is because the Enterprise model is not compatible with a gated process, where no commitment can be provided on outcomes and there is a lack of certainty in terms of associated funding. A procurement exercise would be required as United Utilities does not currently have an alternative route to market suitable to deliver these schemes under a gated mechanism. The need to undertake a substantial procurement exercise would in turn, significantly delay mobilisation dates for the schemes impacted by the gated process making it impossible to meet regulatory dates.

Given the current market position we are not confident of attracting sufficient supply chain interest to deliver these works if an open market competition was required, which would thereby render the programme undeliverable without a suitable supply chain to deliver. Removing a significant proportion of scope (circa £1.3bn across both AMP8 and AMP9 across the 3 identified schemes, Eccles, Wigan and Davyhulme) away from the Enterprise delivery route would also present risk to remainder of the planned schemes identified for delivery by the Enterprise. This is because such a significant reduction in the work bank would likely result in suppliers shifting their focus away from United Utilities to other clients with a certainty of work available. Please refer to DD representation document [UUWR 11 Gated Mechanism](#) for further information.

Overflows

United Utilities has submitted an enhancement case for the largest storm overflow programme in the industry equating to over £3bn across AMP8. Ofwat has proposed a significant efficiency challenge resulting in an assessment of £1.56bn in expenditure across the programme⁴. This is based on an assessment of costs against a simplistic econometric model that uses storage tank volumes as the sole cost driver (not fully considering the specific site challenges and requirements of United Utilities' portfolio of work); a lack of appropriate allowances

⁴ Excluding Advanced WINEP.

for hybrid schemes (modelled against equivalent grey storage capacity); and no appropriately modelled allowance provided for solutions such as Flow to Full Treatment (FTFT).

The experience gained in delivering schemes via the accelerated funding has provided us with an in-depth view of forecast project costs. We have procured a suite of delivery partners to test and deliver the proposed overflows solutions and as such, we are mature in our understanding of the market costs associated with delivering projects of this nature. We have developed standardisation and modularisation to further drive down programme costs and have implemented the five counties model to accurately assess and identify the optimum solution appropriate for the specific requirements of each storm overflow. This cumulative, well rounded and wide-ranging understanding of programme costs leads to the firm conclusion the impact of such a drastic reduction in funding would render the programme undeliverable with United Utilities not able to deliver our commitments at the efficiency, pace and scale required to meet regulatory drivers. Further information can be found in DD representation document [UUWR 10 Overflows](#).

Bioresources

There are two significant areas of concern within the Bioresources plan. The first is the 'Notified Item' to manage Bioresources landbank risks as whilst we are pleased that Ofwat has recognised that landbank risk is an area of uncertainty for the Bioresources price control, there is currently no mechanism provided which would allow companies to be adequately funded for adaptive planning required to ready the industry for future restrictions. This poses a significant risk to deliverability given the uncertainty around future regulatory and compliance and market requirements and our ability to understand and mitigate the potential future landbank challenges under various scenarios. For example, there is a risk that we and the industry would have to rely on landfill for the majority of biosolids in AMP8. This is a poor outcome environmentally, would drive higher costs with less long-term resilience and would result in higher bills for customers.

We also consider that Ofwat applied an inappropriate efficiency challenge on Industrial Emissions Directive (IED) costs. Ofwat has undertaken a benchmarking assessment of costs and proposed an excessive (upper quartile) efficiency challenge. We have been allocated funding of £162.43 million out of a requested £281.53 million (as per the December 2023 submission). The efficiency challenge placed on IED cost is inappropriate and doesn't reflect the site-specific costs for compliance or United Utilities detailed cost build up.

IED compliance is a prescriptive environmental obligation that we must deliver and there are limited efficiencies that can be gained through delivery. A significant reduction in the allowance for this programme will render our ability to deliver against regulatory and compliance requirements impossible. This is an accelerated cross industry programme requiring significant investment to achieve compliance with the IED at our sludge treatment centres, and considerable change across our asset base to comply with new standards. With the entire sector competing for the niche supply chain resources, assets and innovations our significant cost deficit would leave us without the means to attract the supply chain skills, capability or capacity required to deliver a programme of this size, pace and scale. Further information can be found in DD representation document [UUWR 13 Bioresources](#).

In response to the draft determination and an overall cost efficiency challenge of circa £2.4bn would lead United Utilities to conclude that its plan as set out in October 2023 is undeliverable.

6. Approach for final determination

United Utilities has reviewed Ofwat's draft determination and in response we have challenged the robustness and deliverability of our AMP business plan. We have continued to adopt an objective and balanced approach and have taken the opportunity to comprehensively challenge our ambitious plan in terms of scope, totex expenditure and performance. As a result, we have made some key representations to Ofwat's draft determination which are summarised below.

United Utilities has undertaken an extensive review and challenge process in response to draft determination which led us to a revised totex position of £14.429bn. In some areas such as wastewater reservoirs, first time sewerage and flow monitoring we have accepted Ofwat's position and associated determination.

In other areas we have made counter proposals on costs, including some elements of bioresources, reservoir safety and sanitary parameters. In areas such as storm overflows we have challenged our scope, cost and deliverability and have made efficiencies where we can – to the value of £250m, but we have also provided Ofwat with additional evidence in support of our programme where we feel our costs are robust.

We have also gone further in terms of challenging ourselves to find further top-down efficiencies, demonstrated by the £250m stretch efficiency target we have set ourselves within the overflows programme. This has led to a total revised plan value of £14.429bn against the January plan of £14.790bn and Ofwat's draft determination of £12.376bn.

We summarise those in-depth representations relating to the deliverability narrative below to support Ofwat's reconsideration of the draft determination in these areas.

Gated Process and Large Scheme Delivery

We support the proposal for gated processes, where schemes are uncertain in scope/need, cost or deliverability. United Utilities remains supportive of the gated mechanism as a way of managing projects with higher levels of uncertainty (scope, solution or cost), as such we are proposing to include the new Windermere project (comprised of a group of projects including 9 WwTW and 3 overflows) within this mechanism. Given the Windermere scheme is a late addition to the WINEP, at this stage solutions are yet to be finalised around the exact scope, cost and delivery schedule across all the drivers. This makes the Windermere scheme ideally placed for progression via the large scheme gated process based on our understanding of Ofwat's proposal.

As the Enterprise model (detailed in section 4) does not include the late additional requirements for the Windermere catchment and therefore the risk removing schemes from the Enterprise (as explained in section 5) do not apply. Therefore, placing the Windermere batch of schemes into the proposed large scheme gated process presents opportunity for wider commercial discussions and market engagement for this new requirement. This approach will also allow United Utilities and regulators to collectively mature with the new process to deliver WINEP requirements in an innovative way that we hope is efficient and effective in delivery for customers.

In relation to the 3 schemes Ofwat proposed for the gated mechanism (Eccles, Davyhulme and Wigan), in our response to draft determination United Utilities has again rigorously tested the scope (drivers), solutions and costs associated with these large schemes. In relation to Eccles both the solution and costs are robust and United Utilities has presented further evidence that we are confident in scope, cost and solution.

For the reasons as explained in the DD representation document [UUWR 11 - Gated mechanism](#), the late inclusion of the WINEP drivers 1mg/ Ammonia and 0.25mg/l Phosphorus at Wigan, and 0.25mg/l Phosphorus at Skelmersdale by the Environment Agency, our opportunity to fully challenge all aspects of our technical solution was limited. However, following submission of our Business Plan in October 2023, we have continued to develop the catchment solution through our Transition Investment funding. We appointed Jacobs as our Strategic Solution Partner in February 2024, and since then we have been working with their global experts to leverage advancements in technology and identify efficiencies in our catchment solution for Wigan. By leveraging global expertise, we have moved to a more intensified biological phosphorus removal technology, which has allowed us to reduce the size of the assets and reduce costs in AMP from £353m to £279m (£74m efficiency), as included in our draft determination submission.

In reference to Davyhulme WwTW post business plan submission, again through early engagement with our Strategic Solutions Partner, we have identified a further £169m of efficiency savings across the AMP8 and 9 drivers. Again, this strong global expertise has allowed us to identify a number of opportunities including an alternative phosphorus recovery technology and a more intensified biological phosphorus removal process as well as efficiencies around sanitary parameters. This results in a revised business plan of £618m, as included in our draft determination submission.

United Utilities has proposed that the "Enhanced Engagement and Cost Sharing" mechanism for large project delivery would be more suited to delivering these schemes, as it would allow United Utilities to utilise one of our procured delivery routes and engage our new partners early to ensure the schemes can be delivered on time. This approach also provides Ofwat with greater visibility of the progress of those schemes as the design and cost estimate develops, and further allows customers a greater share of any savings realised from our business plan

estimate. The DD representation document [UUWR 11 - Gated Mechanism](#) contains more detailed information on our response.

Overflows

We strongly disagree with Ofwat's assessment of our enhancement case and in our response, we have provided extensive and comprehensive evidence that our costs are robust and efficient. A deep dive on a significant number and variety of sites has been undertaken, with each site being assessed against a list of standard activities that may impact deliverability and costs of schemes. Where site specific factors have been identified we have provided detailed justification of requirements and rationale as to why it is not appropriate to use a simplistic cost model to cost these schemes.

Our experience has shown us that project costs can vary significantly between schemes of similar scale due to site-specific circumstances. Because of this, we ensured that our investigations, scoping and estimating process for our AMP8 programme were extensive to reflect the increased scale of requirements and the increased risk over deliverability associated with a programme of this unprecedented scale. As such, we consider that we have appropriately 'priced in' project-specific costs and risk (both upward and downward cost pressures), rather than taking a simplistic approach of solely using cost curves to derive project estimates. Where appropriate we have implemented alternative solutions to the original PR24 baseline plan, expanded levels of modularisation and standardisation and changed the operating philosophy and configuration of the screening criteria to reduce both screening and the associated costs. This has resulted in an overall reduction of £249m against the original storm overflows enhancement funding request.

As demonstrated throughout this narrative United Utilities continuously challenges itself to deliver a stretching plan and therefore, we are also proposing to apply a top-down efficiency target of £250m against the overflow programme. This, coupled with our extensive evidenced based response provides confidence to Ofwat in the robustness of our revised plan. Further information can be found in the DD representation document [UUWR 10 - Overflows](#).

Bioresources

United Utilities strongly advocates for an 'Uncertainty Mechanism' to form part of an efficient package of risk and return in the case that costs are uncertain at the time of the final determination and therefore have not been allowed for in the final determination. This would allow United Utilities to continue with our robust adaptive planning and cross sector engagement to mitigate against uncertainty in future investment requirements related to changes to the agricultural landbank. We also maintain that the proposed costs of £10.57m in respect of adaptive planning and wholly justifiable and therefore request that Ofwat reconsider its draft determination decision.

In our response to Ofwat's cost efficiency challenge for the IED programme United Utilities has taken a multi-faceted approach to demonstrate the robustness of our modelled costs utilising comparisons with Ofwat's exemplar schemes Ofwat's deep dive into the modelled costs for United Utilities outlier schemes and a robust internal and external assurance of the remainder of estimated costs to deliver the programme. On this basis United Utilities has adjusted the Bioresources costs in relation to IED to the value of £232.9m. Further information can be found in DD representation document [UUWR 13 Bioresources](#).

7. Conclusion

Ofwat can have confidence that United Utilities revised plan presented is robust considering the demonstrable internal challenge process that has taken place to review the scope, solution, cost and deliverability of our ambitious AMP8 plan. This is further supported by United Utilities strong track record and significant evidence of progress made against Ofwat's 3 deliverability tests since the October 2023 thereby providing assurance that the revised plan presented is deliverable.

The United Utilities is satisfied that the revised plan is deliverable within the totex expenditure of £14.429bn requested within this response to Ofwat's draft determination of 11 July 2024.