


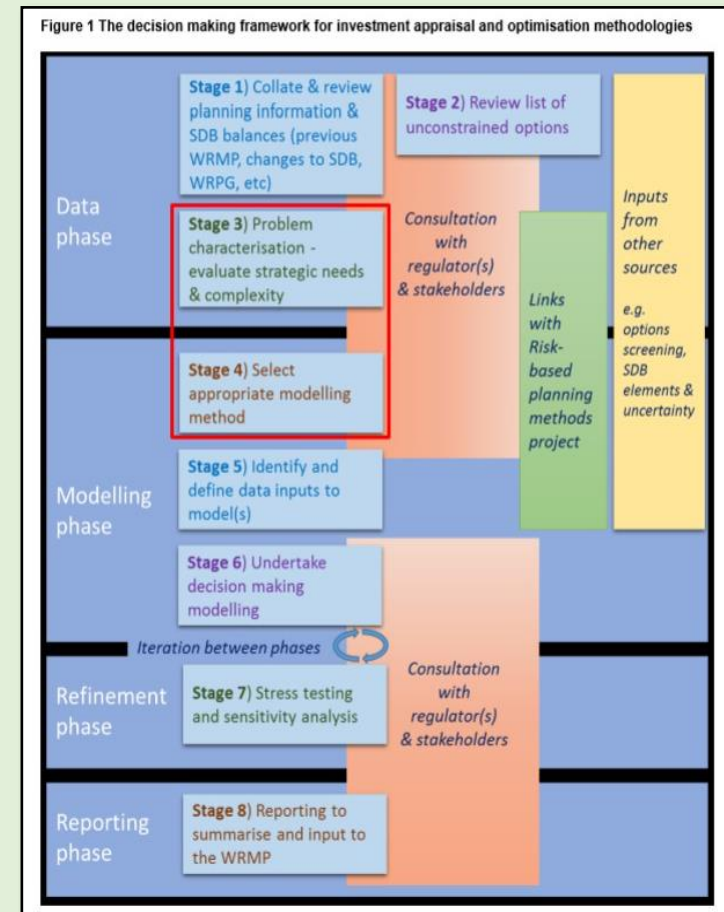
NWT Gate 2 Queries

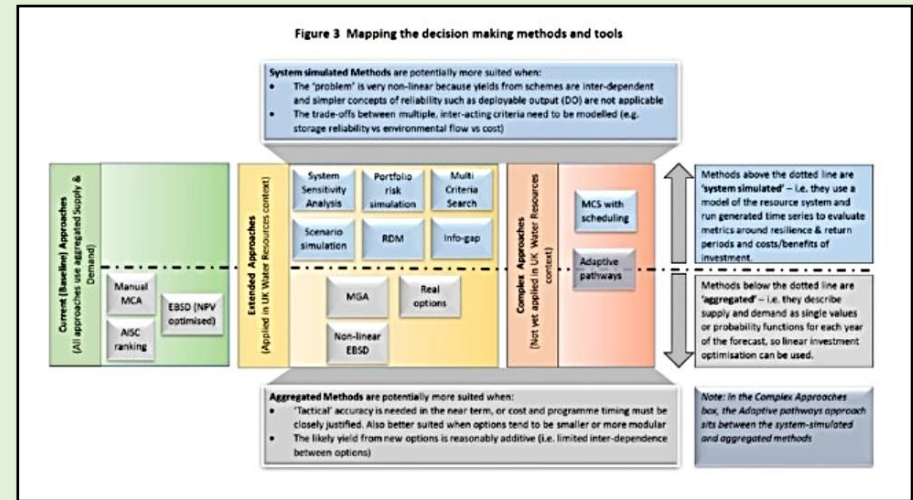
Query ID	Date Sent	Query	Response Sent	Response
NWT001	17/11/22	We are unable to locate your submission of WRMP cost profile tables 5a and 5b. Could you please submit these in Excel format.	18/11/22	<p>Please note that we uploaded all of the WRMP24 tables to the Defra SharePoint site as requested. Table 5a-b contains a large volume of data and therefore was uploaded as a separate file (United Utilities WRMP24_Tables 5a&5b.xlsx). A screenshot of the uploaded files is shown below. We note they have already been accessed by our RAPID Regional Co-ordinator, [REDACTED]. If you need any further support in accessing these tables please contact us.</p> 
NWT002	21/11/22	<p>This query is in regards to your response of Query Number NWT001.</p> <p>We have found the document that you refer to (United Utilities WRMP24_Tables 5a&5b.xlsx). However, this document contains numerous submissions of Tables 5a&5b, most of which are not relevant to the North West Transfer.</p> <p>Could you resubmit the Tables 5a&5b that only reflect the North West Transfer.</p>	22/11/22	<p>We have uploaded spreadsheet 'UU WRMP24_Tables 5a&5b_NWT only.xlsx' to the RAPID portal. The spreadsheet contains only data relating to North West Transfer sub-options. The spreadsheet has all the NWT options, including reserves, apart from Kielder (which didn't get through detailed screening). A green tab means the sub-option is in the preferred WRMP plan, orange means it's constrained (passed all WRMP screening).</p>

<p>NWT003</p>	<p>24/11/22</p>	<p>Efficiency of spend:</p> <ol style="list-style-type: none"> 1. Confirm that there is no spend in Data Collection and Pilot trials in Table 35 and clarify the reason there was no need for this activity in Gate 2. 2. Confirm that there is no spend in Legal in Table 35 and clarify the reason there was no need for this activity in Gate 2. 	<p>28/11/22</p>	<ol style="list-style-type: none"> 1. Included in the Environmental Assessment costs of Table 35, the NWT SRO collected data during Gate 2, but this has been limited to already existing data held by organisations such as the EA (e.g. river flow, water quality, ecology). The cost for gathering that data is included in the costs presented in Table 35 (there is generally no or minimal charge for the data, but there is time involved in obtaining and checking/interpreting it). RAPID can find presentation of this data in, for example, Appendix B, D, E, F, and G of the Assessment of Options Involving River Abstractions Report (NWT-G02-006-002). We have not collected any new data by doing surveys in Gate 2 (although we have started this for macroinvertebrates in early Gate 3 as noted under “Other” in Table 35). <p>Starting survey work in Gate 2 would not have been efficient spend for two reasons:</p> <ol style="list-style-type: none"> a. We needed to wait until we had reduced the list of sub-options down from the 27 at Gate 1 to the 14 currently proposed. b. The NWT SRO then needed to undertake desk based work to understand what surveys were needed/where/when. <p>“Pilot Trials” were not carried out during Gate 2 for similar reasons as noted above. However, under “Other” in Table 35 we have identified advance Gate 3 works that includes pumping tests at the boreholes which have been progressed.</p> 2. Due to the fact the NWT SRO is solely being delivered by United Utilities the legal advice required for the SRO was capable of being met by the UU internal Legal department with no direct cost to the NWT SRO. As the NWT SRO matures and the solution is developed, specialist legal advice will be required and these will be presented during Gate 3.
<p>NWT004</p>	<p>28/11/22</p>	<p>Drinking water quality:</p> <ol style="list-style-type: none"> 1. In the CDR there is reference to no WQ sampling, yet in 7.14 there's ref to continuing with WQ sampling? Where can this data be found? 2. When did monitoring start on R & BH and provide a reference to this data from these samples in your submission or annex. 	<p>29/11/22</p>	<ol style="list-style-type: none"> 1. 2. & 3. <p>The first samples were taken for the river sources in September 2022. Which means that at the time of the Water Quality assessment for Gate 2, earlier in the year, no data was available. However, by the time the report for Gate 2 was submitted sampling had commenced. Apologies for any confusion arising from this apparent contradiction. The sampling for rivers has now commenced but is currently a partial data set, and so it too early to draw any firm conclusions. The data will be collated and reviews commence in earnest in early 2023 when more data points have been</p>

		<p>3. Please confirm why in SWQRA it is stated that there is no WQ sampling data avail at G2.</p> <p>4. Please confirm why many of the limiting hazards have not been assessed in the submission or annexes? There are a number of blank rows in the river, BH & Vyrnwy assessments in the SWRQAs for the UU sources.</p>		<p>collected. Work is progressing to install suitable equipment in those boreholes with limited or no water quality data so that representative samples can be obtained. Once the equipment is installed in any given borehole, sampling will begin.</p> <p>4. Different hazards are likely to be seen at different source types, for example:</p> <ul style="list-style-type: none"> • Algae is more likely to be a limiting hazard in a body of water with lower turnover and exposed to sunlight, such as a reservoir; but not one with a high turnover such as a river, or no exposure to sunlight such as a borehole. • By contrast Arsenic and Cyanide are found in some ground water sources depending on the geology of the aquifer but are not commonly detected in surface waters. Therefore this has been included as a potential limiting hazard for the boreholes (as a precaution), but not for the rivers or reservoirs. <p>Limiting hazard assessments have only been applied at the source type in which it is likely to be found. It is worthy of note that this does not impact the sampling data – full suites of analysis will be completed at all potential sources.</p>
NWT005	30/11/22	<p>The North West Transfer Gate 2 submission report presents the modelling of the sources by yield. Please provide the deployable output (DO) benefit per individual source, for scenarios including annual average and 1 in 500 year. In your response, please include a synopsis of the modelling or assessments undertaken to determine DO per source and how this is aligned to values in the WRMP, to help demonstrate the sources can meet a DO gap that will be left when the Vyrnwy water is diverted.</p>	02/12/22	<p>As explained in Section 4.2 of our Gate 2 submission report, we did not use deployable output (DO) or a supply-demand balance to design the NWT solution. Due to the complexity of our Strategic Resource Zone, and the commitment we made to fully protect customers and the environment (i.e. the United Utilities trading principles), we used a more sophisticated method called “system simulation”.</p> <p>The two figures below are reproduced from UKWIR’s 2016 Decision Making Processes guidance. Figure 1 shows the overall decision making framework, and Figure 3 the specific mapping to each type of method. As stipulated by the Environment Agency’s WRMP24 guidance we are required to complete a “problem characterisation exercise” (Stage 3), and then map the outcomes to the appropriate decision making method (Stage 4 and Figure 3). Our problem characterisation for water trading from the Strategic Resource Zone mapped to the system simulation method.</p>

DO and supply demand balances, however, sit within “aggregated” methods. As highlighted by Figure 3, an aggregated method is more appropriate when tactical accuracy is needed in the short-term and the likely yield from new options is additive. System simulation methods on the other hand are more suited to non-linear problems, when the yields from schemes are inter-dependent and when trade-offs between multiple interacting criteria need to be modelled (i.e. the best value planning we applied for NWT SRO and WRMP24). In our system simulation approach, options were selected directly within a water resources model using a range of performance metrics. We presented this approach to RAPID in September 2022, but would be very happy to talk through it again if helpful.





All this being said, for other elements of our draft WRMP24 we did use an aggregated approach, and to make this work we needed to incorporate the effects of water trading. We therefore modelled the DO impact of water trading and the DO benefit of the NWT sub-options. More specifically, we modelled the benefit of the sub-options to overall resource zone DO, together as a group. This was important because the conjunctive DO benefit of a group of options is invariably different to the summed individual DO benefit. To further improve realism, the DO benefit was tested with trading actually occurring in the model, according to the utilisation patterns provided by prospective recipients. We followed the new EA WRMP24 system response approach and calculated DO for a range of levels of service metrics using our 19,200 year stochastic hydrological dataset.

The table below provides a breakdown of DO for the full 205 MI/d solution, for each salient metric / scenario. The individual sub-option DO benefits were calculated conjunctively but then, for presentational purposes, apportioned to each option based on capacity. As can be seen, for all metrics the DO benefit of the sub-options more than compensates for the corresponding DO impact of trading from Lake Vyrnwy. The largest net improvement is to temporary use bans (TUBs) DO and, along with leakage reduction and demand management, this supports our draft WRMP24 strategic choice to improve

TUBs level of service to 1 in 40 years. Improvements for emergency drought orders (EDO) are more modest, but still net positive.

To reiterate, however, the protection given by the NWT solution to the North West is much more comprehensive than could be provided using an aggregated decision making approach.

We strongly recommend that all similarly complex SROs, or other large conjunctive resource zones with transfer options, are assessed using a system simulation method. Over three successive WRMPs our involvement in the Severn-Thames Transfer (STT) scheme has clearly demonstrated that DO and supply demand balances cannot adequately represent the water resources impacts and benefits of complex schemes. As such, we also endorse the system simulation approach used for the national modelling project commissioned by RAPID.

Impact / benefit	1 in 40 TUBs DO impact (Ml/d)	1 in 200 EDO DO impact (Ml/d)	1 in 500 EDO DO impact (Ml/d)
205 Ml/d export (recipient utilisation pattern)	-47	-54	-24
WR107b_ GWE_RANGLES BRIDGE	6.2	4.0	2.2
WR016_ SWN_RIVER IRWELL	22.4	14.5	7.9
WR102b_ GWE_WIDNES	9.5	6.2	3.3
WR107a2_ GWE_AUGHTON PARK	5.6	3.6	2.0
WR113_ GWE_TYThERINGTON	1.7	1.1	0.6
WR149_ ITC_WIGAN	7.3	4.7	2.6
WR076_ SWN_RIVER BOLLIN	14.0	9.1	4.9
WR111_ GWE_WOODFORD	5.0	3.3	1.8
WR049d_ SWN_RIVER RIBBLE	22.4	14.5	7.9
Net impact on supply demand balance	+47.1	+7	+9.2

NWT006	05/12/22	Planning	07/12/22	i. The SRO is at an early stage of maturity with trading volumes and timings all reliant on the outcomes of the Water Resources Management Plan
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- i. Please explain how the plan for the land lifecycle supports the effective and efficient delivery of planning consent, land acquisition and delivery of the programme.
- ii. Please detail how you will ensure adequate systems and resources are in place and that there are effective and efficient processes and governance arrangements for delivering the planning and land acquisition process.
- iii. Regarding the land life cycle, please detail what consideration there has been for the journey of all customers (e.g. land owners, residents and businesses) being impacted by the construction and operation of the project and how solution owners will ensure a good experience for them.

Processes. This will ultimately impact the options taken forward and when they are required. In order not to pre-empt those processes and to unduly raise concerns with potentially affected landowners and communities, external engagement on the specific options has been limited. It is recognised that getting the initial engagement right with affected parties is critical to programme delivery.

An assessment has been made of long lead in activities that are required to successfully deliver the programme. Land referencing is taking place which has allowed selected ecology surveys and River sampling to begin in autumn 2022, with the remainder commencing from spring 2023. This information will be used to support discussions with regulators and abstraction licence and planning applications.

Our land, planning and stakeholder teams have bi-weekly collaborative planning meetings with the project team to track progress and more detailed stakeholder management and communication plans will be developed as the programme progresses through Gate 3.

- ii. We have tried and tested processes for delivering large scale capital projects including major water infrastructure such as West Cumbria Supplies and the Haweswater Aqueduct Resilience Programme (HARP) with timely engagement with the relevant LPA's and Stakeholder events where appropriate. In addition to our in-house teams, we also have a number of long standing framework suppliers for Environmental surveys, Environmental Impact Assessment, Legal Services and Land Access and Acquisitions and Planning Services. Our framework suppliers are already engaged with land referencing, gaining access to private land for preliminary ecological surveys and seeking initial legal advice. Additional scopes of work will be awarded at the appropriate time as things progress and would include for legal advice to support where required.

We are also aware of the resource constraints at Local Planning Authorities and statutory consultees such as the EA and Natural England. Building on our previous experiences we would look to establish Planning Performance Agreements with local planning authorities, establishing timeframes and ensuring they have sufficient resources to support the development and approval of our schemes. Similar arrangements would be established with the EA and Natural England to secure appropriate

inputs at the right time, supported through continued engagement through the NAU.

With regard to gaining access and securing interests in land required for the project, this will be implemented by ongoing Landowner and Occupier liaison throughout the project lifecycle in accordance with the Company's Code of Practice for pipe laying works in private land, using our statutory powers of entry under the Water Industry Act 1991 in order to carry out surveys, site investigations, installing pipework and accessories and to occupy land required temporarily for construction purposes, securing short term leases or licences in order to occupy land required temporarily for any use that falls outside of our statutory powers or in respect of any land remote from our proposed works, acquiring land required permanently for our works together with permanent rights of access and entering into formal deeds of easement in order to protect and secure permanent rights of access to any above or below ground pipework and accessories laid within land not already purchased for the works. There are well established procedures in place to govern the land acquisition process by ensuring that the work is undertaken by surveyors with the appropriate level of expertise, agreeing and monitoring compensation and land purchase budgets, ensuring that settlements are reached in accordance with the relevant statute, custom and practice and seeking the requisite delegated approvals within the business prior to acceptance and completion.

- iii. Consideration of all customers and stakeholders that may be directly or indirectly impacted by our works is at the heart of our processes. We always strive to mitigate the impacts of our work as much as possible in the early stages of design development. Our extensive experience in delivering effective customer and stakeholder engagement throughout a project life cycle has shown us the importance of bringing impacted parties along the journey with us and allow them to be part of the process. Putting ourselves in customer and stakeholders shoes allows us to anticipate the level of information required before initial engagement commences, to ensure a solid foundation for effective relationship building. It is for this reason that external engagement has been limited to date as we are still developing the NWT SRO options and programme – once complete and options are confirmed, stakeholder engagement and customer communications plans will be developed for each option to be taken forward, again building on our previous project experience.

				<p>Our Land Agents and engineers will discuss pipeline routeing and any land purchase requirements with landowners and occupiers in line with our Code of Practice. Likewise our planning and stakeholder teams will develop a programme of public consultation including for the likes of public exhibitions, virtual exhibitions, use of social media, meetings with parish councils and special interest groups etc. All feedback and consultation responses would be considered in the option design and our planning applications would highlight how designs had evolved and how this feedback had been incorporated with Statements of Community Involvement supporting the applications.</p> <p>Our tender assessment processes for design and construction include for consideration of customer, community and land owner impacts and ultimately our contracts will include for ensuring effective management of environmental and community impacts and compliance with all consents and agreements. Our land, planning and stakeholder teams will continue to support throughout the construction phase.</p>
NWT007	05/12/22	<p>Procurement:</p> <ol style="list-style-type: none"> i. Please provide rationale for why the late tender model has been selected as the preferred DPC tender model for those scheme elements proposed for delivery via DPC. ii. Please advise where in the submission the high-level consideration of the different procurement routes available on the Utility Contract Regulations that may be appropriate for the project has been provided. In addition please signpost us to where in the submission you have considered whether separating the procurement of the main work contracts from the procurement of finance may be appropriate and offer benefits. If these areas have not been covered in the submission, please provide this information. iii. For those schemes identified as being somewhat suitable for DPC delivery, please outline how DPC control points will align with milestones in the programme plan. 	07/12/22	<ol style="list-style-type: none"> i. We have considered all DPC tender models in the context of the NWT SRO. At this stage the Late model is the preferred approach as it allows the Appointee to take the project through to planning/consent while also engaging the market early enough (before detailed design) to facilitate innovation. It also delivers a manageable risk profile for both the Appointee and the CAP during the development of the project. <p>The other tender models were discounted at this stage based upon the following factors;</p> <ul style="list-style-type: none"> • The Early model has been discounted as it does not align with the funding and activity timeline for the RAPID gated process. • The Very Late model has been discounted as it excludes the CAP from the Detailed Design phase thereby limiting the opportunities for them to innovate. • The Split model has been discounted given the programme impacts (time delay) and cost of multiple tenders. This approach may also limit potential market engagement given the extent of tendering activity. <ol style="list-style-type: none"> ii. The preferred choice of procurement routes for our projects are yet to be determined, however potential options will be considered in line with the

- iv. Please provide a summary of any market engagement carried out to date and a high-level plan of future market engagement.
- v. We note that you have stated that the wider coordinated commercial and operational model for the STT is explained in the STT Gate 2 submission. While we understand the overarching commercial arrangements are being considered at a system level, we are looking to understand the specific commercial arrangements you are considering at an individual SRO level i.e. the commercial arrangements (beyond whether it is DBFOM/DBFM etc.) you are considering for elements suitable for DPC in the North West Transfer scheme. Please can you provide an overview of the arrangements you are considering and the rationale for the approach.
- vi. For those scheme elements deemed less suitable for DPC delivery, please can you detail why the proposed alternative delivery methods are appropriate.

parameters of the Utilities Contracts Regulations 2016, including Framework, Open, Restricted, and Negotiated procedures.

Running separate procurement processes for construction and financing elements remain under consideration as part of our Gate 3 activity. As described below (question vi) at the promotion of a project there are a variety of assessments made by the project and programme team with respect to contracting, batching and procurement.

In our Gate 2 submission, we have suggested the most likely route for delivery based on current information. However, the final choice of procurement procedure cannot be determined until the final package of information is available and at this point we will revisit the recommendations in line with the contract regulations.

- iii. We have included DPC control points for the two schemes 'somewhat suitable' for DPC in the attached programme (NWT SRO Programme Incl. DPC Control Points) which illustrates alignment with other key project milestones and the RAPID gated process.

It is anticipated that source option WR015: SWN_RIVER IRWELL will be required for delivery in 2031 and therefore Control Point B (SOC) is scheduled in late 2023 following finalisation of Regional Plans and WRMPs which will confirm the requirement for trading.

Source option WR76: SWN_RIVER_BOLLIN is anticipated to be required by 2041 and therefore the DPC control points would not commence until AMP8.

We note that Ofwat are currently consulting on amendments to the DPC process (such as streamlining control points) and once the revised methodology is published we will adjust our programme accordingly.

- iv. Due to a number of material uncertainties regarding the requirement for the NWT SRO (including the scale and timing of transfers) and the evolving commercial and regulatory environment associated with SROs, we have not undertaken any market engagement during Gate 2. To have engaged at this early stage may have undermined confidence within the market and significantly limited interest in participation in a tender process.

We will utilise lessons learned from our market engagement for the HARP DPC to ensure best practice is adopted. We recognise the importance of giving market participants time to understand and communicate their views in order to shape the development of the project and achieve a successful outcome for all stakeholders.

Engagement will be commenced in Gate 3, primarily focusing upon: understanding market appetite for the projects, CAP Agreement risk allocation principles, and testing of the proposed late tender model and procurement timeline.

DPC market engagement would occur periodically during the procurement phase as illustrated in the programme (NWT SRO Programme Incl. DPC Control Points) referenced in response iii) above. Bespoke engagement plans will be developed once the requirements for the DPC projects have been confirmed through the regional reconciliation process. Activities would include market announcements to raise awareness, open days to develop relationships and facilitate formation of consortia, PIN notices to gauge market interest and capability, bespoke workshops addressing key technical and commercial elements such as design, construction, planning and procurement, and 1:1 sessions with prospective bidders to address specific queries.

For projects considered 'less suitable' for DPC, tailored engagement plans will be produced for each and will be dependent upon final procurement route options and procedures. For larger, more complex projects that may be considered suitable for open market competition under the UCR (because UU do not have existing capability within existing supply chain frameworks), engagement plans will be more extensive including PIN notices to gauge market interest and capability, launch events, bespoke workshops addressing key technical and commercial elements, and 1:1 sessions with prospective bidders to address specific queries. For less complex projects that UU and existing framework supply chain partners have extensive capability and experience of delivering, engagement will be tailored to suit, including where necessary; launch events, focussed workshops, mid-bid reviews, and Early Contractor Involvement activities.

- v. We have yet to undertake a detailed assessment or draw firm conclusions about whether a DPC model would be appropriate, but in the event that a DPC model were to be applied then our initial views on how a DPC contract might work are set out below. This will be subject to further

refinement based on the eventual specifications of the SRO, our experience of the DPC model of procurement, forthcoming guidance in relation to the DPC approach and further evolution of our thinking about how commercial arrangements would best be structured.

Conceptually, we anticipate that UU would be the sole promoter of the DPC projects in the North West Transfer scheme and the counterparty to the CAP. The CAP Agreement will specify asset and performance standards to ensure the availability of water to support trading activity.

The specific details of the DPC commercial models are still under consideration, and could include design and construction as well as maintenance and operation phases. Given the schemes we are considering will have a proportion of their overall costs driven by the actual usage of the assets, we anticipate a fixed and volumetric payment to be made to the CAP. The fixed charge (made irrespective of utilisation) would be intended to recover the capex investment with the volumetric charge being variable in line with the use of the asset (to recover operational costs, such as energy costs). The underlying commercial arrangement will be for the CAP to recover its costs plus a margin.

DPC costs would form part of the overall cost build up for the various sources being used to supply other companies and be built into the overall charge as part of the bulk supply agreement, i.e. the costs are effectively apportioned across the beneficiaries of the projects based upon utilisation of these specific assets. Costs will be recovered from the beneficiaries of trading activity – currently anticipated to be Severn Trent Water and Thames Water - through Bulk Supply Agreements between UU and the trading parties, which will codify levels of service and determine associated prices based upon a combination of fixed and variable charges. We anticipate that an element of fixed charge costs would be recovered by UU from the beneficiary companies at the outset of the CAP contract and during the construction phase.

The detailed commercial arrangements will be developed during Gate 3 when we have clarity regarding the ‘need’ (i.e. which companies require water, at what volumes and over what time periods). This should be determined through finalisation of Regional Plans and WRMPs during 2023. We are also mindful of the emerging commercial and regulatory principles being developed through RAPID and ACWG steering groups and

imminent publication of new DPC guidance from Ofwat, all of which will influence the development of our commercial approach going forward.

- vi. UU has an established internal process to determine the optimal delivery method for capital projects. The predominant methodology is the Delivery Route Allocation Process (DRAP) in which a panel of representatives from the Programme Management Office (PMO), Commercial and Engineering functions select the most appropriate delivery route, to ensure we get the best solution, for the best value, from our contractors.

Consideration is made to the value and complexity of the work, as well as the capability of the contractor.

The key principles of Delivery Route selection are:

- The default is to batch work wherever possible
- Enable a flexible strategy which is based on the lowest Cost To Service (CTS) approach

We use a streamlined, programmatic approach, following agreed guidelines to allocate a large number of projects. Deviations to these guidelines are considered on a case by case basis and raised at the monthly Capital Director Review for endorsement. This will occur before the Project, or Programme, is released to the Delivery Programmes. The DRAP considers a range of procurement options;

- Construction Delivery Partners (CDPs)
- Competitive Tender
- Maintenance Service Provider (MSP)
- MSP Core
- MSP Non-Core
- Network Maintenance Services (NMS)
- NMS Core
- NMS Non-Core
- UU Internal
- Catchment Managed (Rural Frameworks)
- Engineering Studies & Investigations
- Digital Services
- Kit Frameworks

				<p>An initial assessment of the emergent delivery routes has been undertaken for each source option considered less suitable for DPC (as illustrated in Table 28 of the Gate 2 submission) and will be further reviewed and refined during Gate 3 as we gain more clarity regarding the scope and timing of the projects.</p>
NWT008	05/12/22	<p>Please provide an assessment of progress against the project plan that indicates whether or not the project is on track, including reasons for any missed milestones and any delay or impacts on the programme as a consequence</p>	07/12/22	<p>We confirm that:</p> <ul style="list-style-type: none"> a. The project remains on track, with an earliest construction ready date in AMP8 achievable if that were required, and; b. There are no missed milestones or impacts at Gate 2 that have caused delays to the overall programme. <p>We trust that the main report and supporting annexes provides sufficient supporting evidence of this but would be pleased to provide further information if required.</p>
NWT009	12/12/22	<p>Procurement:</p> <ol style="list-style-type: none"> 1. Please can you confirm whether you have carried out any value for money analysis of delivering the scheme via DPC, and provide the results from the modelling. Please also explain the modelling assumptions used. Where these deviate from the prescribed Ofwat assumptions please explain the rationale for using different assumptions and evidence to support the alternative approach. 	14/12/22	<p>We have produced cost estimates for delivering the source options under UU's traditional self-financed model, however the options are currently too immature in their development to produce a meaningful value for money estimate for delivering via a DPC model. Accordingly, our Gate 2 assessments have been based upon Ofwat's size and discreteness criteria as summarised in Table 28 of the Gate 2 submission and detailed in Appendix NWT-G02-007-015_Gate 2 Procurement Route Assessments.</p> <p>In line with RAPID's Gate 3 guidance we will undertake value for money assessments as part of the current Control Point B (Strategic Outline Case) based on more mature project scopes. This will deliver more accurate comparators between the different procurement routes.</p> <p>We also note in Ofwat's 'Creating tomorrow, together: Our final methodology for PR24' (Appendix 5) that in relation to DPC value for money assessments "We also expect companies to use a standard set of modelling assumptions. We will consult on these assumptions before confirming a final position in Spring 2023". We will reflect the outcome of this guidance in our Gate 3 programme.</p>

<p>NWT010</p>	<p>14/12/22</p>	<ol style="list-style-type: none"> 1. Please point to or provide justification why the submission only considers the maximum option of providing 205 MI/d offset support to STT being required by 2033, rather than any lower options which the submission suggests the solution could also be scaled to. This justification may draw on demand requirements that have been communicated from the STT solution itself. 2. Please point us to, or provide details on, how the solution scalability would be approached, should the maximum 205 MI/d not be required in the future. This may include how portfolios of preferred sources would change, and whether this would impact design or capacities of associated infrastructure. 3. A thorough breakdown of utilisation of the UU sources has been provided in different drought events. Please point to or provide more information the utilisation of the Vyrnwy transfer support to the STT transfer under these events, which has led to the UU sources utilisations that are presented. Please include utilisation rates for Dry Year Annual Average and critical periods, for events such as: 1:500 year drought events, in addition to standby or normal year operation. 4. Please point to or supply information on how the monitoring and reporting on carbon emissions during and post project completion is envisaged. 	<p>16/12/22</p>	<ol style="list-style-type: none"> 1. The NWT SRO is a fully scalable solution which offers maximum flexibility. It can transfer any increment of water, up to 205 MI/d, to a range of potential recipients. Whilst the number of options was simplified for STT, the number of conceivable NWT solutions is still very large when combined with implementation phasing over the WRMP planning period. <p>As presented in Table 3 of the submission document, the draft regional planning reconciliation process provided a view of how NWT could be implemented in the future. However, considerable uncertainty remains regarding trading volumes and timing. We expect the picture to become much clearer when WRMPs are finalised next summer.</p> <p>By presenting the full 205 MI/d solution in our Gate 2 submission we provided all of the information that could feature in the final WRMPs. The United Utilities draft WRMP (link below) however provides information on the specific solution that would be required to meet the needs agreed in the previous round of regional planning, including the Sub-options that would be selected. A range of water trading adaptive pathways are also presented. We anticipate that our Gate 3 submission will be more specific and aligned with the final WRMPs.</p> <p>https://www.unitedutilities.com/corporate/about-us/our-future-plans/water-resources/developing-our-water-resources-management-plan/</p> 2. There are essentially two aspects of NWT solution scalability: <ol style="list-style-type: none"> A. Phasing of the Vyrnwy enabling works B. Selection of Sub-options <p>The Vyrnwy enabling works can be phased according to the size of the transfer as the number of assets (e.g. pumping stations) required increases. We are currently working on this phasing to support the provision of updated prices into the regional planning process early next year. At the time of writing the phasing increments are as follows:</p> <ul style="list-style-type: none"> • 0-25 MI/d • 25-80 MI/d • 80-140 MI/d • 140-180 MI/d • 180-205 MI/d
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We have a range of different-sized Sub-options that can be allocated according to transfer volume. For phasing purposes we use our WRMP decision making support tool ValueStream to ensure that Sub-options are allocated according to “best value” (Section 4.2 submission document). Detailed Sub-option implementation time estimates are also included in the tool as constraints.

For certain transfer sizes it could be that we need to slightly oversize the enabling works or Sub-option requirements due to the resolution of our increments. However, overall the NWT SRO solution is extremely scalable in its current form. Our Gate 3 submission will provide much more detail on how the NWT SRO can be implemented in stages.

- As set out in Section 4.1 of the Gate 2 submission document we received different utilisation information from each prospective trading partner. From STW we received only headline utilisation percentages of 15% and 100% for raw water and potable transfers respectively. From WRSE however we received detailed daily time series of transfer demand. We received both historical and stochastic data, but focussed on the stochastic data in our water resources models. The data were derived by WRSE using their water resources model.

We have analysed the stochastic utilisation data provided by WRSE and the table below sets out summary statistics in exactly the same format we used for the Sub-options in the Gate 2 submission document.

WRSE utilisation of NWT	Percentage Utilisation (%)												
	Annual Average	J	F	M	A	M	J	J	A	S	O	N	D
Normal year (bin 1:1 to 1:20 events)	6.8	0.5	0.3	0.2	0.3	1.2	4.8	12.8	20.5	21.0	13.1	5.8	1.8
All years	7.4	0.5	0.3	0.2	0.4	1.4	5.3	14.0	22.3	22.7	14.0	6.1	1.8
Dry year (bin 1:20 to 1:100 events)	17.6	0.8	0.6	0.5	1.2	4.8	15.5	35.0	53.9	53.1	29.7	12.6	3.4
1 in 500 year droughts (bin, for e.g., 1:475 to 1:525 events)	22.9	0.0	0.0	0.0	0.0	0.0	8.3	43.6	71.8	87.5	47.6	12.5	3.2

				<p>4. A footprint is calculated by estimating the individual greenhouse gases that result from all relevant parties' activities, converted into a carbon dioxide equivalent (tCO2e) and reported in line with the GHG Protocol Corporate Accounting and Reporting Standard (2015). This groups the activities and therefore emissions into one of three scopes. Direct emissions (scope 1) are those from activities owned or controlled by the reporting party. Indirect emissions, known as scope 2 and 3 emissions, result from operational activities not owned or controlled. These include emissions produced as a consequence of electricity purchased to power processes and equipment (scope 2) and other indirect emissions such as emissions relating to purchased products and services and business travel (scope 3).</p> <p>Emissions arising from company activities are, and will continue to be reported in company disclosures. For instance the Companies Act 2006 (Strategic Report and Directors' Reports) Regulations require large companies to publish an energy and carbon report applying the 2019 UK Government Environmental Reporting Guidelines, including the Streamlined Energy and Carbon Reporting Guidance (SECR). United Utilities report scope 1, 2 and all relevant scope 3 emissions in their annual report and accounts with energy and carbon accounting aligned with the consolidated financial statements for United Utilities Group PLC.</p> <p>Monitoring and reporting emissions specific to the project duration will require definition of the relevant activities carried out by the contributing parties and tracking when and how these take place. For example which fuels will be included and which scope 3 emissions to include in the project boundary. Once agreed the relevant project activities (e.g. consumption of electricity, natural gas and liquid fuels) will be tracked and the arising emissions can then be calculated using the UK Government GHG conversion factors for company reporting. It is not envisaged that the emissions post project completion will be tracked independently but they will form part of individual company annual emissions.</p>
NWT011	14/12/22	<p>Efficiency of expenditure</p> <ol style="list-style-type: none"> 1. There is a high level of spend in programme management. Please provide more information about the breakdown of this spend. 2. There is a high level of spend in engineering. Please break down the two design development 	16/12/22	<ol style="list-style-type: none"> 1. A breakdown of spend for the main activities covered within the programme management category is provided in the table below. The activities and spend reflect the complex and highly integrated nature of the NWT project with several sub-options spread across a broad area and interacting with numerous operational teams within UU :

categories for the Vyrnwy Works and UU Sources Sub-options into more detailed categories.

3. Please provide more information for the Gate 3 advanced spend included.
4. Please provide full costings for the work of the internal legal team

Activity	Gate 2 spend
Strategy Management	£88,712
Programme Management	£50,589
Project Management	£114,794
Operational Integration	£32,927
Risk Management, collaborative planning and other PMO activities	£161,451
Total	£448,473

2. A breakdown of spend for the main engineering disciplines is provided in the table below. The activities and spend reflect the complex and highly integrated nature of the project including numerous sub-options spread over a broad area interacting and integrating with existing UU assets.

Senior Engineering	£216,484	
Design Management	£426,168	
Engineering Discipline	UU Sources	Vyrnwy Aqueduct
Water Resources	£54,658	£17,293
Civils	£46,491	£92,909
Construction SME	£8,987	-
Electrical	£16,007	£18,427
Geotechnical	£21,677	£3,189
Hydraulic	£48,799	£5,526
Mechanical	£29,074	£11,839
Process	£46,199	£10,446

				<ol style="list-style-type: none"> 3. The original request was detailed in our letter to RAPID dated 22nd June 2022 and attached. We have also provided updates on these works at our regular monthly meetings with RAPID. 4. Our response to Query NWT003 confirmed why there was no spend in this category and as such we are not able to provide full costings.
NWT012	15/12/22	<ol style="list-style-type: none"> 1. Could you please clarify why quantitative costed risk assessment will take place in Gate 3 and not Gate 2? 2. Have activities been planned post Gate 2 to inform future risk assessment? 3. Have you considered annual operational maintenance costs by considering common assumptions used across the water industry for such infrastructure? E.g. with civil maintenance being calculated as 0.30% of the infra and non-infra civil costs, whilst mechanical and electrical (M&E) maintenance being calculated as 1.5% of infra and non-infra M&E costs. 	19/12/22	<ol style="list-style-type: none"> 1. A Quantitative Costed Risk Assessment was not considered appropriate in Gate 2 due to the immaturity of the costed risk information on the NWT programme at that stage. We were however able to develop an Expected Monetary Value (EMV) based on the data that we currently hold using the Qualitative data against each Risk. As we progress through Gate 3 and the cost model is firmed up and we have more maturity in the options that will be taken forward we will be able to develop the risk picture and at that stage will be able to provide a useful Quantitative Costed Risk Assessment (QCRA). 2. As the NWT SRO matures and the proposed sub-options are developed from their current feasibility stage to a design suitable for a planning application, the granularity of detail to develop a QCRA will be incorporated. These activities were detailed in Table 27 of our Gate 2 Report and involves the following activities: <ul style="list-style-type: none"> • Design development (process, civil, mechanical and electrical), • Construction methodology, • Borehole investigation, • Geotechnical site investigation, • Environmental surveys, • Water quality testing, • Ground and surface water modelling, • Stakeholder engagement, • Water Resource modelling, • Procurement Plan development • Land access and purchase identification, • Planning Screening Opinions where appropriate, • Planning Application preparation, and • Ongoing engagement with the Environmental regulators.

				<p>Some planned activities that address areas of risk are dependent on the outcome of the Mid Gate 3 Checkpoint and the progression of the scheme. An example of this is Geotechnical Site Investigation.</p> <p>We will continue to actively manage existing and emerging risks as the scheme development proceeds. Quantification and formal reporting of risks will be completed as part of cost baselines and forecast updates produced at appropriate stages during the scheme's development.</p> <p>3. We have included operational maintenance costs for the NWT options on the following basis;</p> <ul style="list-style-type: none">• M&E maintenance - Based on [✂] of the M&E capital costs• Civil maintenance - Based on [✂] of the civil capital costs <p>These percentages are based upon analysis from UU engineering. The approach forms part of UUs costing methodology and has been used as the basis to calculate Maintenance Opex since PR09 across all WRMP projects. The percentage assumptions used by UU are reviewed periodically and may be updated ahead of PR24.</p>
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