# Strategic Regional Water Resource Solutions: Annex E: Procurement, Ownership and Commercial Operation Report

## Standard Gate Two Submission for River Severn to River Thames Transfer (STT)

Date: November 2022

# Severn to Thames Transfer

## Procurement, ownership and commercial operation report

**STT-G2-S5-501**

**November 2022**

*Disclaimer*

*This document has been written in line with the requirements of the RAPID Gate 2 Guidance and to comply with the regulatory process pursuant to Thames Water's, Severn Trent Water's and United Utilities' statutory duties. The information presented relates to material or data which is still in the course of completion. Should the solution presented in this document be taken forward, Thames Water, Severn Trent Water and United Utilities will be subject to the statutory duties pursuant to the necessary consenting processes, including environmental assessment and consultation as required. This document should be read with those duties in mind.*

# RAPID - Severn Thames Transfer (STT)

Procurement and Commercial Strategy

Gate 2 Section 7.7 - Annex

September 2022

Building a better working world

# Contents

# 1. Abbreviations, Figures and Tables

### Abbreviations

| | |
|---|---|
| CAP | Competitively Appointed Provider |
| DBFO | Design Build Finance Operate |
| DPC | Direct Procurement for Customers |
| SE | Southeast |
| SIPR | Special Infrastructure Projects Regime |
| SRO | Strategic Resource Option |
| ST | Severn Trent |
| STT | Severn Thames Transfer |
| TW | Thames Water |
| TWUL | Thames Water Utilities Limited |
| UU | United Utilities |
| VBP | Vyrnwy Bypass Pipeline |
| WIA | Water Industry Act |
| WRMP | Water Resource Management Plan |

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# 2. Executive Summary

## 2.1 Background and Definitions

This report has been prepared in order to meet the requirements of the scope of work set out in our engagement letter. The Report is an annex to the Procurement and Commercial Strategy section of the Gate 2 Report Section 7.7. The precise scope of work set for EY is attached in appendix B.

The Severn to Thames Transfer System consist of the following elements which for clarity are set out in the terms used in the Gate 1 Submission:

1. **STT System** consists of the STT Scheme plus System Support Elements
2. **STT Scheme** consists of
    - The Interconnector between Rivers Severn and Thames
    - The River Vyrnwy Bypass Scheme
    - Conveyance of water through the rivers Vyrnwy, Severn, Avon and Thames

**System Support Elements consist of sources necessary to provide additional water in times of water stress.**

## 2.2 Tender Model Assessment

Our scope of work includes the assessment of the tender model most appropriate to the elements that make up the STT Scheme. System Support Elements are out with our scope and are being considered elsewhere. The tender model options considered include

1. Delivery using Direct Procurement for Customers (DPC) as set out in PR14, and subsequent guidance, issued by Ofwat
2. Delivery by the promoting licence company as part of a regulated settlement
3. Delivery under the Special Infrastructure Project Regulations (SIPR) as set out in the Water Industry Act 1989

### 2.2.1 Severn to Thames Interconnector

Our conclusion in relation to the Severn to Thames Interconnector are as follows

1. The pipe-based interconnector solution is best suited for delivery using DPC on the grounds that
    a. The capital value substantially exceeds the de minimis limit of £200m capital expenditure and totex as set out in PR24 methodology consultation and £100m as set out in PR19 guidance
    b. That the project meets the criteria of discreteness
    c. There is likely to be a sufficient market to allow competitive tension on the procurement process and to drive enhanced value for money

2. Thames Water should be the promoter of and contract counter party to the DPC on the grounds that the primary benefit of the interconnector would, at least in the near term, be TWUL customers

3. SIPR as currently set out in the Water Industry Act (WIA) requires the project to demonstrate a substantial risk to the Licence company were it to be procured and financed in the usual way. This condition is not met however we note that should SPIR be amended to focus only on Value for Money relative to the business-as-usual approach then SIPR the approach under SIPR at that time may be viable.

***Procurement Model***

A "Late" tender model approach is deemed most suitable for the Interconnector procurement. Allowing the Appointee to remain involved up to the planning and consent stage, with detailed design completed by the CAP allowing room for innovation and appropriate risk allocation amongst the parties.

A procurement timeline has been developed in line with the "Late" tender model commencing procurement in September 2026 with a parallel DCO application.

### 2.2.2 Vyrnwy Bypass Scheme

Our conclusions in relation to the Vyrnwy Bypass Scheme are as follows

1. Based upon current cost estimates the scheme may not meet the scale criteria for being procured under DPC although the project is discrete within the network. Should future cost estimates increase then the case for DPC may be stronger, and this should be considered again at Gate 3.

2. Based on the Current Water Resource Management Plans, the primary beneficiaries of the scheme in the short term are likely to be Severn Trent Customers. That being the case it follows therefore that the promoter of and contract counterparty of the scheme should be Severn Trent however the current water resource modelling may lead to primary beneficiaries being further downstream in the system.

3. When in the future beneficiaries of the Bypass Scheme are also located in the Southeast (SE) of England then a cost recovery mechanism under the Commercial Structures should be instituted.

4. The size of the project means that there is no prospect of the project being designated under the current SIPR regime.

## 2.3 Commercial Strategy Development

We have considered the commercial arrangements that align to the primary function of the STT System. The STT system is based on the ability of Appointees that have access to surplus water can, through the conveyancing of that water through the system, meet the demand of users where there is a shortage of local water supplies. In this way the STT System is a arrangement underpinned by a purchaser/buyer set of arrangements.

The key commercial terms and mechanisms are as follows:

- Bulk Supply Agreements will put in place setting out the terms for water to be bought from suppliers.
- Charges will be unbundled into:
    1. an element for the unit costs of water produced – priced on a marginal cost basis
    2. A charge for capacity of conveyancing assets made available to the buyer. This charge will be raised irrespective of use to allow the assets created to be fully funded, taking account of any delivery incentives that may be agreed.
- The charging regime will allow for costs to be funded by the ultimate beneficiary of the resilience capacity provided and the volumes of water consumed.

Over time in may be the case that the user base of the STT System, and for individual assets within that system, will expand. As such the charging and operation regime should be subject to a system of Codes, managed by a System Operator, who will ensure that fair access to and pricing of the system is implemented.

## 2.4 Conclusions

In summary we conclude the following:

1. That the Severn to Thames Interconnector is likely to offer best value for money if procured under a DPC arrangement.
2. That the party best placed to procure the Interconnector is Thames Water Utilities Limited and that they should be the sole contract counter party for the operation of the CAP.
3. The Vyrnwy Bypass does not currently meet the criteria offering best value for money to customers if procured using DPC and as such should be delivered using existing procurement mechanisms within the appropriate licence company. This may be revisited at Gate 3 as cost estimates develop and the use case of the asset is further articulated.
4. Based upon the current expected use and demand profile contained in the Water Resource Management Plans the party whose customers are most likely to benefit from the bypass and therefore who should deliver the Bypass scheme is Severn Trent Water. However, this position may change upon the finalisation of water resource planning exercises.
5. The STT system should operate on a buyer/seller basis with charges unbundled into:
    a. Availability charges paid annually irrespective of use by consumers who enjoy increased resilience offered by the STT System. The basis of apportionment is likely to be most cost reflective is calculated on the expected additional resources that consumers will benefit from. This may be recalculated from time to time to reflect expected or

actual changes in the expected use model derived from appropriate WRMP processes.

b. Charges based upon units of water purchased on an expected basis adjusted for actual consumption.

6. The beneficiaries of the STT system is likely to change over time. The establishment of charging principles in the Charging Code should facilitate the addition of removal of beneficiaries so that the charging regime in aggregate is fully cost reflective and costs are allocated fairly on the basis of identified benefit.

# 3. Introduction and Background

## 3.1 Overview

The River Severn to River Thames Transfer System is a strategic project to provide additional capacity of 300 to 500Ml/d of raw water to the Southeast of England during drought events. At the project's centre is the Interconnector which enables the transfer of raw water from the River Severn to the River Thames.

Due to the risk of simultaneous droughts in both river catchments, additional sources of water, apart from those naturally occurring in the River Severn, have been identified to augment the baseline flows. These multiple diverse sources of additional water provide resilience in the provision of raw water flows to the River Thames.

The scheme capacity of 300 to 500Ml/d equates to a Dry Year Annual Average Deployable Output benefit of 250 to 400Ml/d to the Southeast. The regional planning process will determine the volume, timing, and utilisation of water to be transferred. The diversity of sources means they can be developed in a phased manner to meet the ultimate demand profile as determined by the regional planning.

The operation of the STT Scheme conveying raw water from the lower River Severn into the upper or middle River Thames via an interconnector would increase the catchment area from which water resources can be drawn to the south-east of England. There are two options to transfer flows between the river catchments:

- a pipeline interconnector;
- a canal interconnector.

In addition to any flows that may be available to be abstracted under licence from the River Severn, a range of raw water transfer supporting source options for the STT are under consideration to provide additional resource.

The STT SRO comprises 2 principal aspects:

- Severn to Thames Conveyance – Deerhurst to Culham pipeline or Cotswolds Canal conveyance, including piping to Culham; and
- Source rivers used to transport water associated with supported abstractions (Rivers Vyrnwy, Severn, Avon and Thames).

To deliver the water into the STT System, there is a requirement for water supplies to be supplemented with other water sources. These additional sources of water are being provided by United Utilities and Severn Trent Water who are jointly with Thames Water to develop this solution. The provision of this additional water is covered under four separate SROs that provide the facilities to enable supporting flows for the STT. These SROs are STW Sources SRO, STW Minworth SRO, UU Sources SRO and UU Lake Vyrnwy SRO.

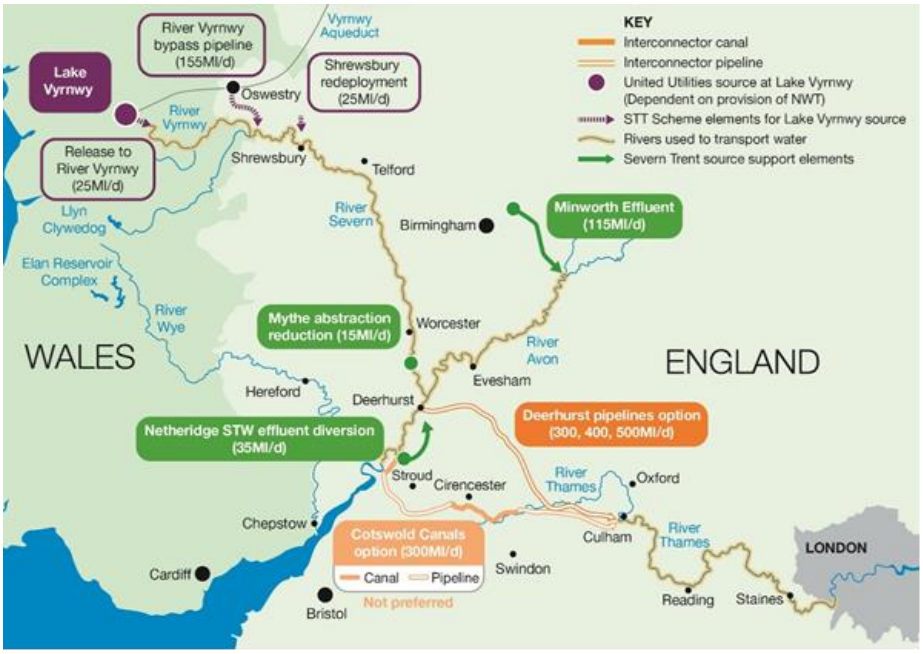
The water transferred into the Thames operational area could potentially be abstracted for storage in a new reservoir (SESRO). As such, there would be an interface between the STT scheme and the SESRO scheme. As well as existing abstractions from the river Thames there is also the opportunity for STT to provide benefit to other downstream SROs, namely Thames to Southern Transfer (T2ST) and Thames to Affinity Transfer (T2AT).

The STT System, therefore, comprises the STT SRO and the source SROs which would be required to work as a combined system to deliver the required outputs into the River Thames.

Figure 1 illustrates the scope of the STT system and the related UU and STW individual company, source-related elements. The individual sources identified to date under the separate SROs comprise:

- Mythe abstraction reduction (15 Ml/d);
- Minworth WwTW effluent diversion (115 Ml/d);
- Netheridge WwTW effluent diversion, Deerhurst pipeline (35 Ml/d);
- Netheridge WwTW effluent diversion, Cotswold canals (35 Ml/d); and
- Vyrnwy Reservoir release (180 Ml/d)

**Figure 1 STT System**



The two UU SROs (UU Sources SRO and UU Lake Vyrnwy SRO) provide additional capacity and facilities within the UU network to then enable Vyrnwy Reservoir support releases into the River Severn.

Key Terminology for STT:

- “The Interconnector” will convey raw water from the River Severn to the River Thames.
- “The source support” elements comprising Lake Vyrnwy, Minworth WwTW discharge, Mythe and Netheridge.
- “The STT Scheme” which comprises the interconnector, the River Vyrnwy Bypass Pipeline, Shrewsbury Redeployment, and conveyance of the source support elements through the river systems (Vyrnwy, Severn, Avon, and Thames).
- “The STT System” which comprises the STT scheme plus STT source support elements that are required to form an operational system.

## 3.2 Scope of this Report

The body of this report is made up of two distinct sections:

1. The development of a procurement strategy for the SRO Interconnector and mitigations while also considering the procurement of the Vyrnwy Bypass. Noting the Cotswold Canal conveyance option as described in Figure 1 has been discounted and therefore not considered.

2. Development of a commercial model and set of commercial arrangements to manage the operations of the wider STT System accounting for both currently known requirements and future resilience considerations.

The EY Scope summary is detailed in Appendix B

## 3.3 STT System vs Interconnector & Vyrnwy Bypass

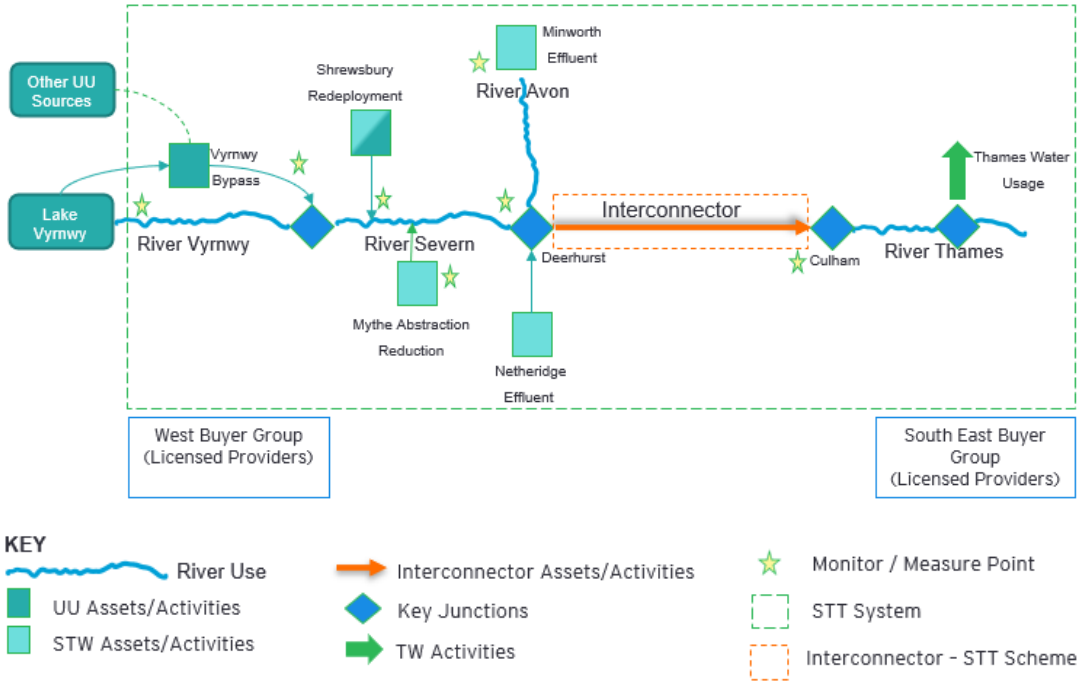
The STT System refers to the overall project envelope including the sources, interconnector, and mitigations, which all together will form a system set up to process and convey water in line with user requirements. The system is the focus of the commercial arrangements, code, and system control elements of this report.

Elements of the STT Scheme namely the Interconnector and mitigations are the focus of the report for the purposes of procurement strategy and delivery of the Interconnector asset which is the most cost adsorbent element of the System. This element of STT received funding at PR19 of £66.6m[1] and will unlock the ability to convey water from unsupported flows initially and supported flows once the relevant infrastructure is in place.

The schematic diagram below has been established to illustrate the STT System as well as the discreetness of the Interconnector project within the system. The final ownership of the Vyrnwy Bypass is subject to further analysis of potential beneficiaries arising from Water Resource Management Plans.

[1] PR19-final-determinations-Strategic-regional-water-resource-solutions-appendix.pdf (ofwat.gov.uk)

**Figure 2: STT System Schematic**




Water is added to the system from either UU or ST sources and conveyed along the River Severn to Deerhurst. The new Interconnector then transports the water further East to Culham where Southeast users / buyers take control of the water and add it to their system for treatment and customer distribution.

As is described later in the Commercial Model section there are points of monitoring and measurement throughout the system identified in the diagram by the star icons. These are important points / interfaces which will support the System Control function and charging mechanisms.

The diagram also identifies two other Buyer Groups “West” and “Southeast” these buyer groups are other licensed providers (water companies) who in the future may wish to access water from the STT System. Current examples of the West Buyer group include Wessex or Bristol Water and the Southeast buyers Affinity or Southern Water.

# 4. STT Scheme – Interconnector Procurement

## 4.1 Procuring Party Analysis

Prior to the consideration of the Procurement Model, it is necessary to consider who would be the party responsible for the asset. That party would be responsible for the procurement of the project, via DPC or any other route.

The primary beneficiaries of the Interconnector function are expected, in the first instance to be TWUL customers, it is recognised however that other beneficiaries of the STT System may become apparent as the System develops and so we have considered the commercial terms under which the Interconnector activities could be funded by additional customers in the future.

To put in place multiple promoters of the Interconnector function implies a fractional ownership of the underlying asset. A fractional ownership model is not common in the current sector and may introduce negative views from investors in the DPC and represents a change in asset models applied in current regulatory arrangements.

## 4.2 DPC

Building on the Gate 1 submission and Procurement Strategy report July 2021, the Gate 2 process has concluded that while the STT System is not considered to be suitable as a DPC in its entirety, the STT Scheme (SRO - Interconnector between Deerhurst and Culham) is seen as an element of the System which is suitable for a DPC. Assessment has been caried out against the PR19 DPC[2] guidance as follows:

### Size of Project

The expected Capital costs of the Interconnector are likely to be substantially greater than the de minimis threshold of £100m for a project to be considered a DPC. The recently published consultation on PR 24 Pricing Methodology indicates that the Size Threshold for DPC may increase to £200m but the current interconnector costs still exceed that threshold by a considerable margin.

Unlike the Vyrnwy Bypass Pipeline (VBP) which is discussed later, the operational costs of the interconnector may be significant as they involve pumping of water into the interconnector from the River Severn. These costs will however only further increase the totex of the project the applicability of DPC.

### Discreteness of the Asset

We have considered the Discreteness of the Interconnector across the dimensions set out in Ofwat PR19 guidance.

*Stakeholder Interactions and Statutory Obligations:*

While the asset may be significant in terms of permitting TWUL to meet its statutory obligations, the relative simplicity of the asset in terms of technical design and operation means that the risks of asset failure leading to a failure of statutory obligations is in itself small. It is also likely to be less significant to TWUL's ongoing ability to meet obligations.

*Interactions with the network:*

[2] https://www.ofwat.gov.uk/wp-content/uploads/2017/12/Appendix-9-Direct-procurement-FM.pdf

The Interconnector has very limited economies of scale with the rest of the TWUL network. The asset effectively operates independently of the network in so far as any request for operation of the asset, other than persistent sweetening flows, will result from a discrete request to operate.

It also represents a separate and non-contiguous asset relative to the wider network.

While the asset is not "passive" in that it requires actions to operate, those actions are simple to define in contract and will have clearly associated performance criteria associated with them.

*Contributions to supply/capacity and ability to specify outputs:*

The Ofwat guidance specifically highlights resilience projects as being less suited to DPC as the capacity of the asset is rarely needed. However, in this case the discrete nature of the operations and the ability to clearly define outputs (volumes of water transferred, means that this project is more suitable to DPC than may be the case in other low use resilience projects.

*Asset operational failures:*

The failure risks of the interconnector asset, where it consists of a pipeline and pumping capability, is well understood by the market and there is a readily identifiable market for the provision of such capability.

***Conclusion in relation to Discreetness***

The Interconnector, while being a resilience project which presents with an uncertain demand profile, is a suitably large and well-defined technical solution as to make it viable to apply DPC principles to the procurement. In addition, the operational characteristics make it feasible to construct a discrete operational charging regime that can be contractually implemented.

**Competitive Tension and efficiencies**

There is evidence that the provision of underground assets as part of a wider system but operated independently of that system is attractive to market participants, in particular construction parties and investors in the DPC arrangements.

**Value for Money**

Although based on these considerations a DPC procurement would appear to offer value to customers, a comprehensive value for money assessment of DPC vs BAU procurement for the Interconnector will be undertaken at the DPC Control Point E (OBC), in accordance with Ofwat DPC guidance.

## 4.3 SIPR

The use of a "licensing model" or SIPR like that of the Thames Tideway Tunnel has also been considered for the development of the Interconnector. In order to meet the legislation requirements of SIPR as set out by the Secretary of State, the project would need to have the following impact upon the Appointee:

*"The project is of sufficient scale and complexity to put at risk continued operations".*

This is considered unlikely under the current legislation given:

1. The project size is unlikely to be material relative to the existing Regulatory Capital Value of TWUL. For comparison the STT Scheme is estimated to represent c.9% of TWUL's RCV compared to the c.45% that TTT represented when the project was specified.
2. The engineering solution is not especially novel or complex.

On this basis, SIPR has been assumed not to apply to the interconnector procurement, and DPC is therefore the assumption from Gate 3. However it is noted that STT is a large scheme that has been identified by Ministers as potentially able to benefit from SIPR, and that Ofwat have recommended to Government that the legislative tests be broadened to remove the 'size and complexity' test.

A procurement of the interconnector under SIPR may therefore be considered should this change progress, subject to timings.

### 4.3.1 Interconnector (CAP) Activities and Funding

The Interconnector is likely to be procured on a Design Build Finance and Operate (DBFO) basis. The specification of the contract will be to make available conveyancing capacity at defined volumes and with specified standards.

The activities can be broken into the following categories

- Design and construction and financing of the asset
- Operation of the pumping and transport systems including maintenance

Typically, the first of these obligations will be funded with annuity like charges between the CAP and the contracting party. These charges will be made irrespective of use as the costs arise in all circumstances and are predictable.

The operation of the assets will cause the CAP to incur costs in proportion to the volumes of water transported. In particular energy costs are directly driven by activity. It is likely therefore that while the CAP may take some short-term risk on matters such as energy prices, the underlying commercial arrangement will be for the CAP to recover its costs plus a margin that may be agreed during the DPC process.

Maintenance costs in so far as they are driven by consumption may be treated as a variable cost in the CAP arrangement and recovered on an as incurred basis with perhaps some moderation for agreed rates for labour.

### 4.3.2 CAP Performance

The CAP agreement will specify asset and CAP performance standards. A key standard to be maintained is the physical integrity of the transfer assets to prevent leakage and to maintain water quality.

Water being abstracted by the CAP will have a directly attributable value, either based on the abstraction costs agreed with the Environment Agency, or costs of supply agreed with UU/ST. As such we would propose that leakage and performance measures with the CAP should be priced relative to the impact on the priced water supplies affected by their activities. For example, if leakage is 1Ml then the costs to the CAP should be 1Ml times the unit cost of the water lost.

# 5. STT Scheme – Vyrnwy Bypass

## 5.1 Vyrnwy Bypass Pipeline in relation to STT Scheme

The Gate 1 submission defined the STT Scheme as consisting of:

1. The Severn to Thames Interconnector
2. The Vyrnwy Bypass Pipeline
3. Conveyancing of water in Rivers Vyrnwy, Avon, Severn and Thames

The Water Resource modelling indicates that the Vyrnwy Bypass Pipeline (VBP) will be necessary in the short term for the provision of additional water to the Severn Trent area in the first instances and ultimately required to ensure sufficient resources are available to the STT System as a whole.

## 5.2 VBP Procurement Model

### 5.2.1 Procuring Entity

The appointee who should be responsible for the procurement of the VBP must first be established. To consider the most appropriate appointee to undertake this role we have considered which customer base is likely to be the main beneficiary of the functions of the VBP and therefore from where the asset will be primarily funded. This maintains the direct connection between funding and financing that currently exists in the geographically licenced areas.

The water resource modelling is still being developed but we understand that the current view of future operating requirements are that the VBP will in the short to medium term provide additional water consumed by existing customers of Severn Trent Water (STW). This therefore would indicate that STW should undertake the development of the VBP using the appropriate procurement model considered below.

In the future it is possible, indeed likely that the VBP will be used to transfer water from Lake Vyrnwy to the River Severn that is further transferred through the interconnector to the River Thames. In these circumstances then the application of the cost recovery code and Bulk Supply agreements will enable costs of the VBP to be funded from charges to the ultimate consumers of that water and transfer capacity.

The Water Resource Modelling currently being completed will ultimately allow for a determination of the appropriate procuring authority. The final identification of the appropriate procuring entity will be resolved as part of the Gate 3 process.

### 5.2.2 Procurement Model

We have considered the potential of the VBP for delivery via DPC. The following aspects of the consideration are key to our conclusion that the project is not suitable for the DPC procurement model:

***Project Size***

Current costs estimates indicate that the construction cost of the assets will be between £100m and £200m. This sits between the £100m threshold for DPC in PR19 and the suggested threshold of £200m in the PR24 Draft Methodology. As

such the more recent view of the VfM threshold would suggest that DPC was unlikely to offer better value for money than traditional procurement models, however the value for money position in relation to project size should be kept under review.

***Degree of Discreetness***

The VBP does demonstrate a number of characteristics that, on the basis of the Ofwat Discreetness Criteria would make it more suited to DPC. These include

- It will have a limited impact on the appointees ability to meet statutory obligations – The asset will be provide an important but not crucial degree of resilience and in normal circumstances would have little to no impact on the appointees operations.
- It has simple, well understood and manageable interactions with the network
- It is a separate asset within the appointee area
- Failure risk is well understood.

These features are however unlikely to be sufficient to compensate investors for the relatively small scale of the project and the limited size of nominal return available.

Given the capital value of the project, its resilience nature and the lack of material operational costs, the likelihood of DPC offering a better value for money solution than traditional procurement is low.

### 5.2.3 Funding of the VBP

The funding of the VBP will be subject to the principles underpinning the STT System and contained in the associated Code. The ultimate consumers of the capacity offered by the VBP will be charged in proportion to their expected usage.

This may ultimately be modified to reflect changes in proportional use, however the available charge of the asset will be independent of the actual flows through the asset i.e. even if no additional water is provided via the VBP then availability charges will be made to consumers. This will be necessary to ensure that the asset can be financed by the procuring appointee.

In some Water Resource Management Plans (WRMP) scenarios it is possible that VBP usage volume will change considerably overtime and that the demand from individual water companies will change. This presents a sequencing and value for money challenge to be considered. In particular it is likely that the following options will have to be considered

1. Should customers to fund significant spare capacity (oversizing of the assets) in the short term and in the expectation of future demand, or;
2. A smaller capacity should be funded now but with the ability to add capacity at a later date and in light of more certain demand volumes

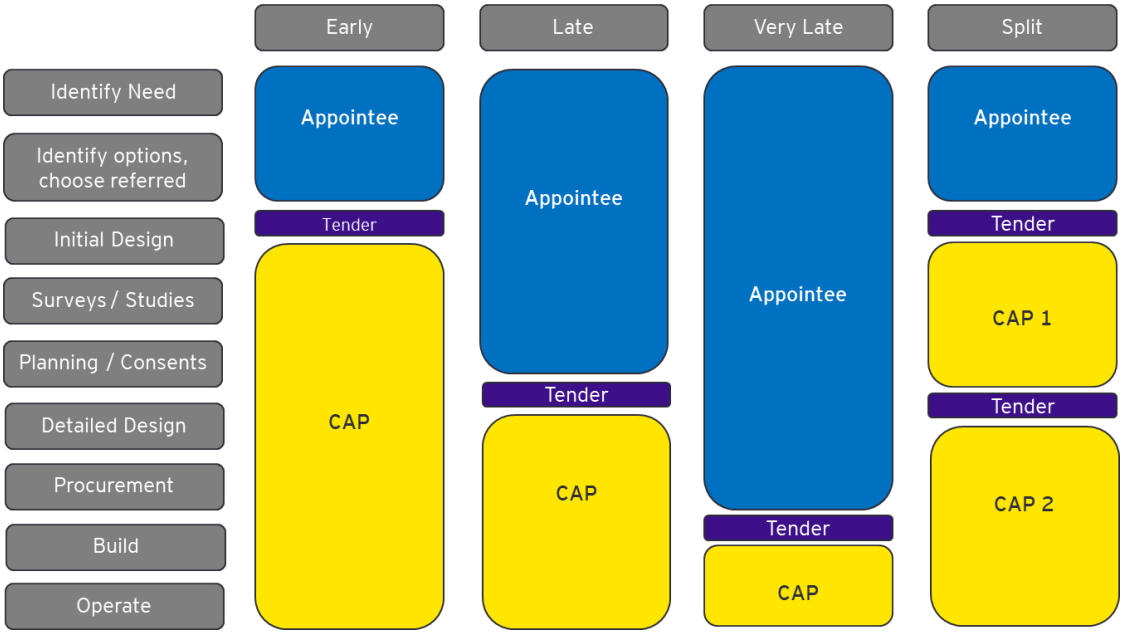
This value for assessment of options will depend on a number of factors including WRMP, Cost estimates and risks that can only be properly addressed during Gate 3.

# 6. STT Scheme – Interconnector Tender Model

## 6.1 Tender Model Options

In line with DPC guidance documentation the diagram below illustrates possible Tender models[3] for the development of DPC projects with an Early, Late, Very Late or Split Procurement Model.

**Figure 3: Procurement Tender Models**




Considering the development of STT Interconnector with multiple interfaces and reliance on the wider STT system the “Late” Model is currently considered to the be the method of Tender Model most suited to the project. The main arguments supporting the use of the Late Model are:

- There is considerable planning risks inherent in the project, including the likely use of Development Consent Orders and as such the passing of such risk to bidders/CAP is unlikely to offer best value for money.
- In order to ensure a timely planning process, considerable design development will be necessary, the Late Model allows for this development to be undertaken but still contains significant opportunities for competition to improve VfM.
- The timing of the project driven by water resource need does not align to a sequential planning and procurement process to be undertaken. There is a need to commence planning processes in advance of procurement to maintain the expected delivery dates.

[3] https://www.ofwat.gov.uk/wp-content/uploads/2020/02/DPC-Con_Appendix-2_DPC-Briefing-Note.pdf

The other models have been discounted based on the following factors:

- The Early model has been discounted as the Appointee will develop the project up to Planning / Consent in line with existing programme development expectations.
- The Very Late model is discounted as it excludes the CAP from the Detailed Design phase which limits opportunities for innovation from the CAP and changes the risk profile.
- The Split model is discounted given the time impacts and cost of multiple Tender rounds as well as potential reduced market engagement given the extent of tendering, while also limiting the Appointees ability to take the project to control the process up to and including Planning / Consent.

### 6.1.1 The Utilities Contracts Regulations 2016 (UCRs)

The choice of procurement procedure is yet to be determined, however potential options will be considered in line with the parameters of the UCRs including, Open, Restricted and Negotiated procedures with a prior call for competition. The innovation partnership is not considered appropriate for this project given the existing market with the capability to deliver this type of infrastructure.

### 6.1.2 Combined or separated procurement approach

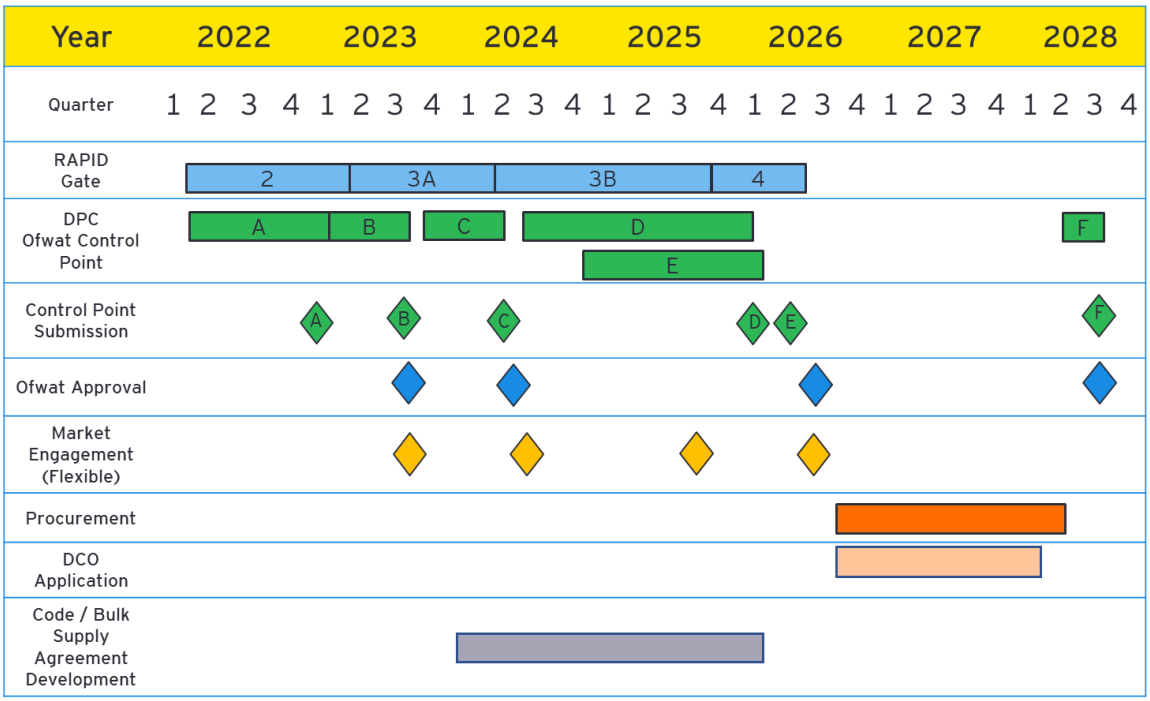
Running a sperate procurement processes for the construction element of the interconnector and the financing elements remains under consideration and will be further developed once the project progresses through to Gate 3 and can be considered in the detailed procurement strategy of the party taking the interconnector project forward.

# 7. STT Scheme – Interconnector Procurement Timeline

## 7.1 Indicative Procurement Timeline

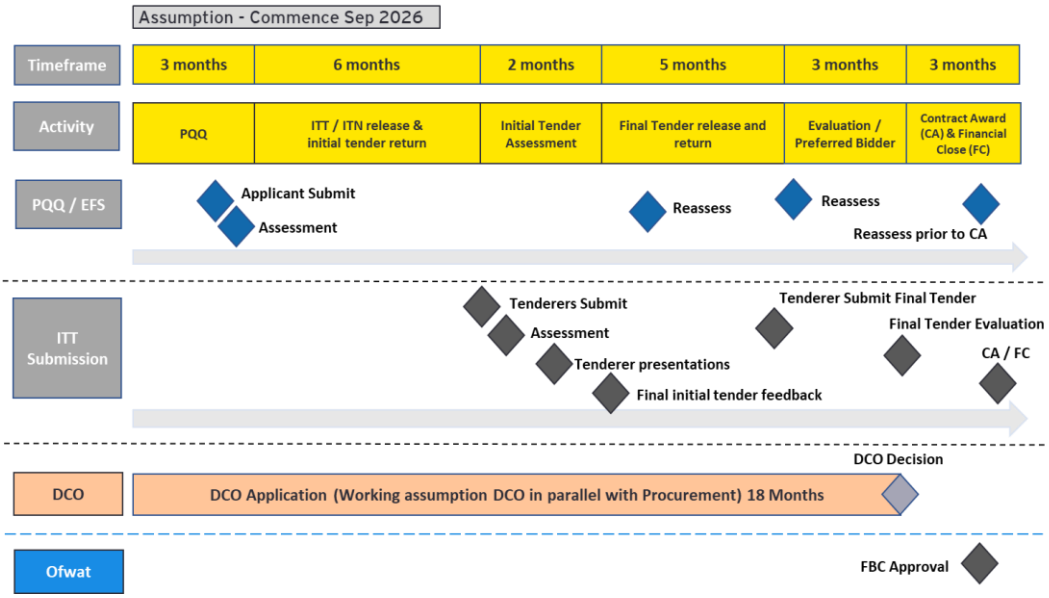
The diagram below has been produced in order to align the Procurement process with that of the RAPID gateways, Ofwat DPC Control Points and approvals and indicative Market Engagement. The Procurement Timeline is predicated on a DPC Late Tender Model as described in Section 6.

**Figure 4: High Level Timeline**




The diagram below builds on the above to provide more detail around the timings and stages of the procurement process. Noting that the current assumption provided has been to run a parallel 18-month DCO Application with the procurement phase, overall, this indicative timeline sets out a Contract Award and Financial Close by Q4 2028. Where possible accelerating the DCO application ahead of the procurement would be prudent as it would provide de-risk the Planning risk for the CAP and subsequently helping drive market interest and competition to secure the project.

**Figure 5: Indicative Procurement Timeline**




## STT System – Sequencing and Commitment

At the Gate 2 stage is it highlighted that the while a vital and significant piece of the STT Systems infrastructure the Interconnector alone is only one part of being able to operate the System effectively. There is a need for commitment amongst the parties to deliver associated infrastructure at sources and interfaces throughout the System in order for it to become operational and effective. The role of commitment and sequencing has been raised with Ofwat and will be developed further as the project approaches Gate 3 to ensure accountability for the development of the project.

The development of the STT system will likely take place over an extended period of time as demand models and requirements become better defined. There is a risk however in any programme that parties will need to commit to deliver assets well in advance in of future need being fully committed.

The parties to the programme will need to ensure that where commitments to future usage or demand are made then these are honoured so that early developers of system assets are certain that the investment will be fully funded, utilised and no risks of investments being unfunded in the future.

# 8. STT Scheme – Interconnector Market Engagement

## 8.1 Indicative Market Engagement Plan

The Table below sets out a high-level plan for Market Engagement of the STT Interconnector project, ensuring the market is given sufficient time to engage, understand and communicate its views around the proposed development of the project. The process is an important element for both the market and the procuring body as it gives insight into the latest market views on large infrastructure development, contract types, appetite for financing and risk allocation metrics.

As well as the understanding of the DPC process and appointment of the CAP, the market engagement process will be key to informing potential participants who they would be contracting with as a client, what their role will be and how the programme for this project positions itself amongst wider Infrastructure activity across the UK helping to ensure the supply chain is prepared to deliver the project.

**Table 1: Indicative Market Engagement Plan**

| Item | Market Engagement Plan | Activity |
|---|---|---|
| 1 | Early Market Engagement | • Market announcement<br>• Press coverage of proposed activity<br>• High level market event |
| 2 | Open day market engagement event | • Introducing the Interconnector Project<br>• Procurement approach<br>• Q&A |
| 3 | Follow up Market Engagement Event for interested parties | • Project overview and update<br>• Procurement approach<br>• Contract considerations<br>• Financial and funding<br>• Construction and operations |
| 4 | PIN | • Notification of Tender Release to the Market<br>• Update Procurement Timeline in line with progress |
| 5 | Design, construction, operations and maintenance event | • Initial design<br>• Constructability review<br>• Planning and environment<br>• Operation and maintenance<br>• Q&A |
| 6 | Opportunity for 1:1 sessions / discussion | • Leave open for 1:1 session's following up from Q&A / Questionnaire |
| 7 | Commercial update | • Procurement<br>• Financing / Payment mechanism<br>• Risk allocation<br>• ITA<br>• Defects |
| 8 | Procurement Commences | • Formal Communication through the Tender Process from this point Forward |

# 9. STT System - Commercial Model

## 9.1 Commercial Model Development

We considered three classes of commercial model as potential models for the STT Arrangements:

1. Joint Enterprise
2. System Operator
3. Buyer Seller Model

The preferred commercial structure was the **Buyer / Seller Model**, which was further analysed in three forms:

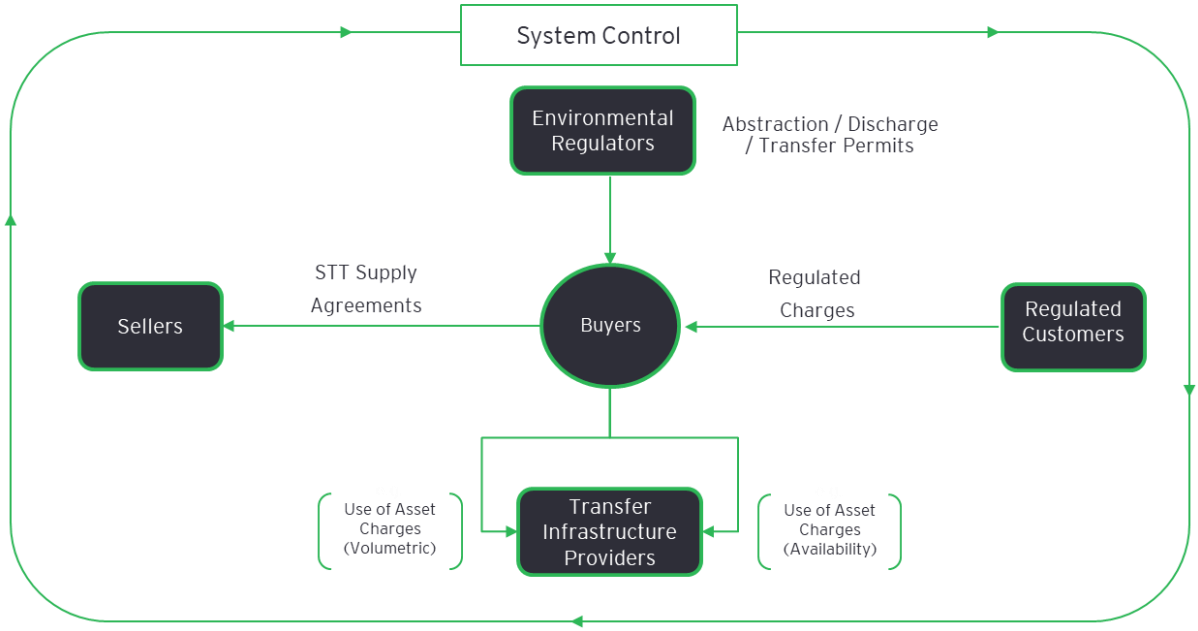
1. Simple
2. Extended Simple
3. TWUL Recharge

The **Extended Simple Model** is currently considered to be the commercial model to progress through Gate 2, however parties remain in discussion about the commercial structure of the STT system and it will further develop as the project progresses through the RAPID Gateways. A detailed assessment of each of the referenced models can be referred to in Appendix A of this report.

### 9.1.1 Summary of the Buyer / Seller Model Arrangements

The overarching Buyer / Seller Model described above is summarised in the following diagram:

**Figure 6: Buyer Seller Model**



### 9.1.2 The Buyer / Seller Model

In this model the relevant parties take on the role of

**"Buyer"** - who within the system is the primary Buyer of additional water resources in the STT system.

"**Seller**" - where they are in a position to make available additional resources as required by the Buyer.

The Buyer / Seller arrangements would be governed by supply contracts.

Each party would be responsible for investing in and maintaining the infrastructure necessary to fulfil their function as Buyer / Seller.

### 9.1.3 Buyer Role

The primary **Buyer** in this model is a role best fulfilled by TW. The characteristics that lead to this allocation of roles are:

- The STT system is intended to provide additional water resources to the Thames licence area where TW would then provide that water to its customers

- TW is not providing additional water resources in its own area, it is relying on additional resources from outside the area (either abstracted from the reiver Severn in the normal course of its running, or though the introduction of additional water provided by Severn Trent Water (ST) or United Utilities (UU).

- To access these additional resources an Interconnector Asset must be connect the River Severn to the River Thames. It is considered with this model that TW be responsible for the delivery of this asset as it is consistent with the assets necessary for it to fulfil its licence obligations. The key features that support this conclusion are

    1. The stated purpose of the interconnector is to provide water to Southeast Customers; however, we acknowledge as to WRMP for the Southeast future customers may require use of the STT system. Current infrastructure at Culham however would still require TW to undertake activities to further transmit additional water capacity to other Southeast customers

    2. DPC as it is currently designed is a contractual relationship between a single Licence holder and Competitively Appointed Provider (CAP). This simplifies the contractual terms between DPC purchaser and provider and in turn increases the market attractiveness of the project. The introduction of multiple DPC counter parties may create unnecessary complexities (e.g. in terms of asset reversion or revenue counterparty risks) that ultimately affect the deliverability of a DPC arrangement.

    3. A single DPC purchaser model allows for simplified data collection and management processes and aligns to expected procurement of the asset by a single entity

While it is the case that TWUL best aligns to the role of primary buyer downstream from Culham (the primary SE buyer) it is possible that other companies (e.g. STW) could act as buyers of resources delivered before the use of the interconnector (i.e. upstream of Deerhurst). In these circumstances the cost reflective approach to charging will ensure that beneficiaries of additional water supplied to that point are charges fairly and fully for the costs ascribed to such supply.

Buyers of water from the STT system have two discreet types of purchase, 1.) Capacity which provides them with resilience and 2.) Volume where water is provided on request / instruction in addition to any previous capacity they have allocated.

### 9.1.4 Seller Role

The **Sellers** in this model will be STW and UU. The rationale for allocating both as Seller is based upon both UU and STW owning the resources that will provide additional water as required.

As the owner of these resources these companies may have alternative customers, including existing customers, that would continue to be provided supplies outside of the STT Arrangements.

### 9.1.5 Costs

Costs would be recovered through two methods **Availability** and **Consumption.**

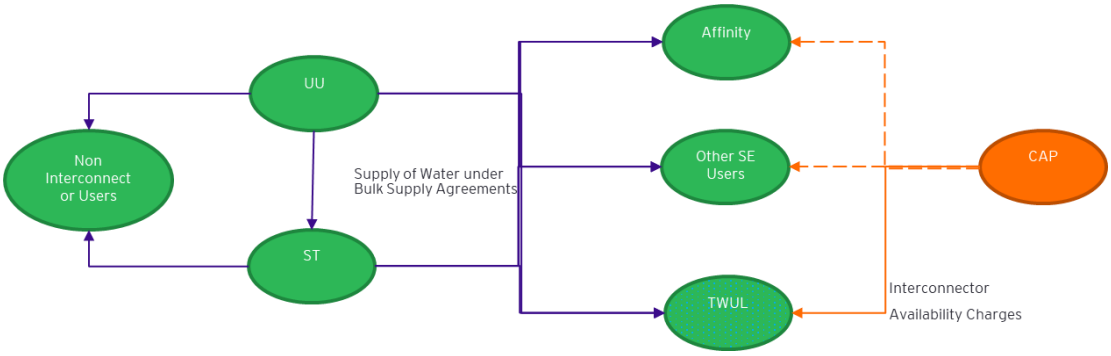
- **Availability -** recurring charge not dependent upon volumes of water demanded
- **Consumption -** charges based on annual usage

### 9.1.6 Tailoring the Commercial Buyer Seller Model

Through the process of developing the commercial structure three sub–Buyer Seller Models were also considered, predominately based on the need to consider and ensure future adaptability and resilience could be incorporated within the commercial model.

The Extended Simple Model as illustrated below is currently considered to be the preferred model which stakeholder's holders will continue to work and develop as the project progresses through the RAPID Gateways.

**Figure 7: Extended Simple Buyer Seller Model**



### 9.1.7 Key Elements of the Extended Simple Model

#### Bulk Supply Agreements

In this model all parties who may seek additional water to be provided by the STT system will enter into Bulk Supply Agreements with the two potential providers of that water. While it is the case that SE water users may seek additional supplies from TWUL with its own resources, that is excluded from the STT system as is water already present in the SE region.

#### Interconnector Charges

In the extended simple model, the question of the relationship between SE users, including TWUL must be addressed.

DPC as it is currently structured creates a contractual arrangement between a single Licence holder and a Competitively Appointed Provider. This reflects the monopolistic arrangements currently in the water system and the limited shared network arrangements in place. While it may be possible to structure a joint procurement of the CAP by all potential SE users, this presents a number of challenges

1. It raises the question of which network the DPC asset is part. Fractional ownership of a single asset is a new concept in the regulated system. This raises the question of the revisionary vale, who should pay it and what would the regulatory treatment of that asset be post DPC.

2. The CAP will have to accept multiple counter party risk

3. The procured contract would still require a variation mechanism to enable future additional users to have a direct relationship with the CAP.

As an alternative to joint procurement of the CAP, it is possible that the contract could be structured that the DPC be procured by TWUL as a single contract party related to asset ownership. This simplifies and aligns the DPC arrangement to the current bilateral model of DPC. The CAP arrangement would be altered to reflect potential multiple uses so that other users are able to instruct the CAP to transfer water depending on their need.

To achieve a more diverse Instructing Party arrangement, conditions for party acceptance will be necessary but are likely to be based on the instructing party holding an appropriate water licence.

In the diagram above we have shown the main counter party arrangement between CAP and TWUL as a solid line. Other parties have a more limited Instructing party connection to the CAP i.e., they can issue an instruction to transfer water for which separate variable charges will be levied by the CAP.

Fixed charges from the CAP should be recovered in proportion to the expected use by all partied (TWUL and Instructing Parties). Any variation to between actual and expected usage should be accounted for by recharging of usage between the parties. This mechanism would be governed by the STT Charging Code and should apply to both fixed costs associated to the Interconnector and the fixed costs arising in the supplier networks.

It should be noted that the charges for the VBP would be allocated on a use of system basis irrespective of the selected procurement model.

**Supply Agreement Charges**

The primary charges governed by the supply agreement are expected to be the variable costs of supplies provided to parties. These charges may include network costs incurred to make surplus water resources available at the time.

In circumstances where multiple parties have a need to request STT additional supplies then the combined request will need to be allocated to each of the requesting parties under the terms of the individual contracts in place.

**Additional Parties to the System**

The key advantage of this structure is that it enables a more flexible approach to the use of the system. To incorporate a new party then the following arrangements would need to be amended

1. A new Bulk Supply Agreement between the new entrant and the respective suppliers

2. Incorporation as an Instructing Party for the Interconnector

3. Incorporation into the STT Charging Code so to enable charging to reflect actual to expected use to reflect the revised system

### 9.1.8 Conclusions on the Extended Simple Model

The extended simple model as significant advantages over the simple model in that

- It is structured to allow expansion of the user base
- It allows for separation of the commercial arrangements for the supply of water from the commercial use of the interconnector
- It simplifies differential pricing of use between cost regimes

It should be noted however that there is an increased need to record and govern use of the system to allow for charges to be properly applied that reflect the overall use of and reliance upon the system.

This option will require the CAP agreement to be flexible and facilitate incorporation of new customers to the project company. This may lead to the CAP seeking a variation payment to reflect the more complex revenue arrangements however as this is only in relation to variable operation, costs the impact on CAP financing should be relatively small.

### 9.1.9 Conclusion / Preferred Model

While the commercial model remains subject to change and ongoing discussion with stakeholders, for the purposes of Gate 2 the current thinking amongst the participants is the Extended Simple Buyer Seller Model is preferred and provides a structure which is manageable amongst the parties while also allowing for future adaptability and resilience considerations.

# 10. STT System - Commercial Arrangements

## 10.1 Objectives of the Commercial Arrangements

As part of the Gate 2 submissions to RAPID it is necessary to set out the commercial arrangements that may be applied to the STT system that allows for costs to be recovered from consumers. The primary goal of the STT system is to provide the Southeast of England with enhanced resilience to drought and water stress.

In the design of the commercial arrangements, we have considered the following objectives as being critical to the enduring successful operation of the STT system.

### Efficient risk allocation

In defining the commercial model, the underlying principle that risks allocated to those best able to manage them has been adopted.

### Clear Roles and Responsibilities

The STT system may in the future be quite dynamic with significant volumes of water and activities being undertaken annually. The commercial model must enable the rigorous management of water and value flows by ensuring that clear user requirements and the activities undertaken to meet those requirements can be easily maintained. This includes having the ability to construct clear contract specifications and processes of allocating resources in periods of high demand or lor low system availability.

### No cross subsidy between regulatory areas

The commercial arrangements will require that parties are able to fully recover costs incurred in the provision of the STT systema and the water it conveys. This cost reflective approach is necessary to:

1. Encourage and properly reward investment in the assets necessary for the system

2. Ensure that the ultimate consumers of the STT resources are capable of fully funding the system costs

This approach is necessary to ensure that customers in any area are not exposed to costs from which they derive no benefit.

### Investable Solutions

It is important that investors in the infrastructure necessary for the STT System to function can see a clear mechanism for obtaining a return on that investment. This is particularly the case in relation to the Interconnector assets connecting the Severn to the Thames which may require a significant e.g., more than £1bn of capital expenditure.

### Future Adaptability

The potential future modes of operation of the STT system is highly uncertain and could change significantly from the initial intended use. It is necessary therefore to develop commercial terms that meet the requirements of clarity and certainty set out above but equally allow for future changes to the arrangements. For example, setting up contractual terms that make changes difficult or preclude additional users from the system is undesirable.

### 10.1.1 Cost Reflectiveness and the Value Chain

Before considering the commercial arrangements that can be used to govern charging and revenue arrangements between the parties, it is useful to consider the nature of costs that will be incurred in the use of the system.

These costs fall into the following categories

**The costs of infrastructure that is put in place to enable the production and transfer of water along the STT route.**

For example:

- Investments in pumps and assets to introduce water to the river systems,
- Enhancements to other network assets necessary to convey additional water in the network prior of following conveyance in STT
- Creation of the interconnector
- STT system management costs

These costs will be incurred and need to be financed irrespective of the level of use of the STT system and to that extent they represent an annual fixed cost for the provision of network resilience arising from the STT system

**The costs incurred by the Seller in processing the water to be conveyed**

These costs will only be incurred where water is introduced to the system and as such can be estimated on a volumetric basis.

For example:

- Unit cost of water produced in the respective supplier's network
- Network management costs that may be incurred to ensure home network resilience and enabling water to be released
- Additional pumping or other volumetric costs

**Key Cost Areas in the STT System – Fixed Cost Occurrence**

In order to avoid the risk of cross subsidy between organisations we have sought to ensure that as far as possible the beneficiaries of resilience are only exposed to the costs that are incurred up to the point of consumption.

In order to do this, it is possible to consider the STT system as consisting of four fixed cost area. The four abstraction points are:

a. Abstraction downstream from UU Network and the Vyrnwy Bypass (up to Point A)

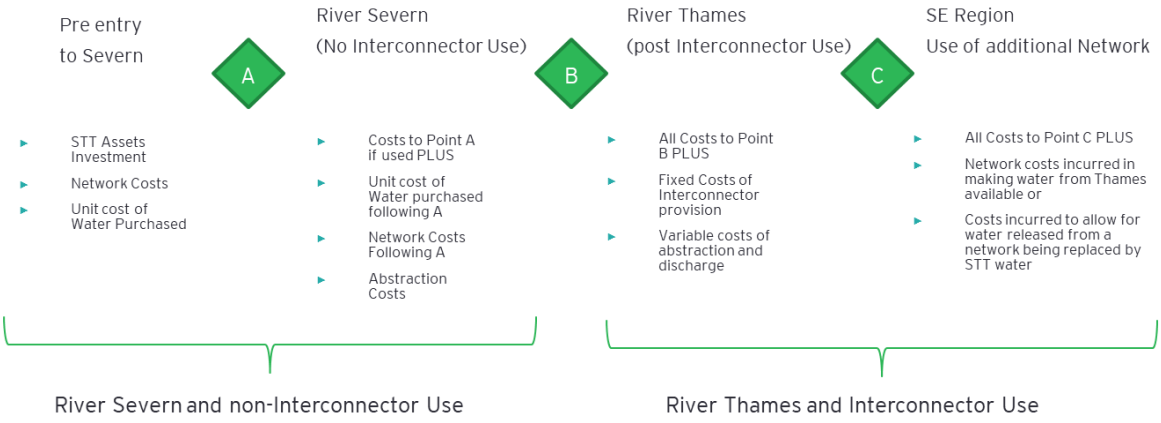
b. Abstraction from the River Severn (no Interconnector Use) (Abstraction between A and B)

c. Abstraction from the River Thames – (Post Interconnector Abstraction) (Between B and C)

d. Abstraction or supply Downstream of the Interconnector and further processed by TWUL or other networks (Following Point C)

This is illustrated in the following diagram:

**Figure 8: Abstraction Points**




In line with the cost reflective principle any beneficiary should be exposed to the fixed costs incurred upstream from their point of abstraction. This will be examined further in the charging and contractual arrangements section.

### Fixed costs recovered in charges

Fixed costs will occur in each area of the STT system. The fixed costs of the system should be recovered through the following charge mechanism:

1. Beneficiaries should bear their share of the fixed costs of the system used to convey water to their location / abstraction point.

2. Where multiple users have access to the system at a particular point, costs should be allocated in proportion to the benefits delivered (e.g. expected water use adjusted for actual use).

3. Where costs have been recovered from beneficiaries upstream of an abstraction / use point then the proportion of costs recovered from the upstream should be excluded from any subsequent cost recovery of beneficiaries downstream.

### Variable Cost Occurrence and Recovery

Variable costs in the STT System will be driven primarily by the production of water and where necessary costs incurred to actively transport water e.g. pumping through the interconnector.

Variable costs are therefore more easily recovered from the parties directly requesting additional supplies of water to be conveyed through the STT system.

### 10.1.2 Summary of Cost Recovery Mechanisms

The following table summarised the costs incurred and cost recovery mechanisms for the parties engaged in the STT System.

**Table 2: Summary of Cost Recovery Mechanisms**

| Participant | Costs incurred | Cost Recovery Mechanism | Potential Adjustments |
|---|---|---|---|
| Sellers (e.g., UU/ST) | Finance of Capex incurred for STT Purposes | Annual Charges to TW on availability basis | May be appropriate to recover use of asset charges from other parties on an expected consumption basis. Otherwise, TW to consider recovery of its costs |
| | Costs of existing assets allocated to STT (capital assets) | Pro-Rata on Consumption where costs can be separably identified | |
| | Operating Costs of Water Requests | Volumetric charges to TW. Volumes based on gross request (ie uplifted for expected system losses) | Annual presumed consumption adjusted annually to reflect actual |
| | Network costs incurred to Meet Requests | Volumetric charges to T where costs can be separably identified | Annual presumed consumption adjusted annually to reflect actual |
| CAP | Financing Costs and Fixed Overheads | DPC Charges to TW on annuitized basis to enable debt service and return on equity to be maintained over the project life. | Potential adjustments for non-availability, service failure, agreed variations, and passing of beneficial refinancing gains to customers. All based on standard project arrangements |
| | Volumetric Costs based upon Demand | DPC Charges to TW on actual basis.<br>Likely to be a cost-plus bid margin basis of pricing.<br>Charges set one year in prior financial year and adjusted to actual use in the following year. | Pricing could be adjusted on a e.g., 5-year review basis to reflect changes in energy or other costs that would be poor value for money to price for the whole contract term.<br>May include provision for additional wear and tear if the use of the asset is significantly greater than that anticipated at contract award |
| Buyer (e.g., TW) | Internal Costs to operate STT | Recovered through Wholesale Charges | |
| | DPC Costs | Recovered from Customers in an Allowed Revenue Determination | Annual presumed consumption adjusted annually to reflect actual<br>May be amended to reflect use of the system by third parties e.g. other water companies based on operation of Code |

| | | | |
|---|---|---|---|
| Buyer (e.g., TW) | STT Availability Costs (UU/ST capital charges) | Recovered through Wholesale Charges | Recovered through Wholesale charges |
| | STT Water Purchases | Recovered through Wholesale Charges | Wholesale Charges adjusted for actual in subsequent year.<br><br>May be amended to reflect use of the system by third parties e.g., other water companies based on operation of Code |

The cost recovery mechanisms will develop further at Gate 3 of the RAPID process as the water companies begin to negotiate terms of the Supply and Agreements and Code.

## 10.2 Commercial Arrangements between Water Companies

We have set out in the earlier the activities each of the parties are required to undertake given their role in STT. These roles will be governed by the contracts put in place between the parties.

### 10.3 Contracting and Operating Arrangements

Having established the cost and value chain structure of the system it is necessary to consider:

1. What contracting arrangements are appropriate to reflect the activities and use patter of STT

2. What are the operational procedures that should be reflected in the contracts

We have considered a number of models that could be adopted to reflect the buyer/seller relationships that underpin the STT function both in its initial state where there are a relatively small number of identified users in future states where the number of users may increase, the system may form a part of wider water trading relationships across England and Wales.

### 10.3.1 Initial Contractual Arrangements

In defining the initial contracting models, the following elements of the system must be considered in determining the contractual obligations an associated pricing

1. That the investment in STT infrastructure must be funded from fixed annual charges to mirror the financing obligations of the asset owners. This reflects the significant uncertainty of expected volumes transferred in any one year and removes the potential for large over or under recovery of fixed costs in any year.

2. That the request for additional water should be made on a needs basis and that the volumes requested from a particular source must reflect that the transfer system will have inherent losses of water due to evaporation, ground loss or other losses. Water volumes requested and introduced will be gross of anticipated losses so that volumes net of losses can meet the requirement at abstraction. Sellers of water will be paid for the volume introduced not the volume extracted.

3. The operation of the system will require an accurate recording of:

    a. Who has requested water transfers and the volumes requested by them

    b. Which parties have provided the requested water

    c. A clear permissions process to ensure that the river systems used have sufficient capacity to carry the water at the time it is required

    d. Abstraction's permissions process to ensure that the system can sustain the required abstraction at the time it is expected

### 10.3.2 Commitment by each party

While the development of the SRO and Sources requires independent investment and delivery from the various parties involved, to develop the STT system in its entirety commitment and delivery from each party is required, therefore, key principles and expectations of the parties are summarised as follows:

- Infrastructure developed for the sole purpose of servicing the STT system will be able to recover costs fixed and variable as agreed
- Infrastructure developed or enhanced for the purpose of servicing the STT system would be able to recover a proportion of costs fixed and variable in line with the proportionate use the STT system has on the asset.
- In the event infrastructure is investment in a delivered but the providers from Sources cannot provide the water, penalties would be imposed to cover the cost of sourcing water from more expensive sources if applicable.

### 10.3.3 Supply Agreements between TW and UU and STW

***Service Requirement***

The Services under the agreements may be specified as follows:

1. The supplier put in place agreed assets and systems to enable volumes of water to be introduced the STT system as determined by TW (This may be on a peak flow and or a flow by year basis).

2. To provided water upon receipt of a valid request and provided that the River systems are available for transfer of water to the abstraction point.

3. To notify TW if there is restriction on availability due to Seller system performance or water supply issues in their licence are that would prevent additional flows being available.

***Contract Term***

The contract term may be defined as fixed duration (e.g., 25 years of operations). This may have implications for degree of asset amortisation included in charges

***Pricing Terms***

Annual charges to reflect the ongoing availability of the system to TW and to enable the Providers to

- Service capital raised to construct the assets
- Fund lifecycle and set maintenance charges
- Fund fixed overheads

These charges may be subject to price review aligned to the regulatory price periods or may in part be fixed for the duration of the contract term.

Volumetric charges will be based upon water ordered by TW. This price per litre may be established on the basis of:

- Operating charges established with reference to prevailing wholesale costs
- Additional activities based on any pumping costs
- Any additional network adjustments necessary to enable the Provider to divert water resources to STT.

The volumes of water purchased will need to consider the level of unavoidable losses that should be expected to arise from the use of inherently lossy systems such as open water courses. So, for example if TW require 80Ml of water and losses are expected to be 20% then 100ML should be requested and processed. Compensate the Provider for the water provided however it will increase the unit cost of water at the final abstraction point. This may form the basis of DPC incentive measures.

### 10.3.4 Conditions of Supply

In order to utilise river systems permissions may be necessary from the Environment Agency. Where water is sought but environmental conditions prevent the use of some or all the STT system, including sources, then this risk should not result in a reduction of Availability charges.

### 10.3.5 DPC Contract Terms

The DPC contract is likely to contain the following commercial terms

**Services**

The services to be provided by the DPC should include:

- Provision of assets to pump and convey water at specified volumes with no leakage (or leakage within defined limits related to accepted asset design. This may include
  - Final Planning Consents
  - Prep Works
  - Final Design

- Provision of the asset for the duration of the contract
- Maintenance of assets to be CAP risk
- Provision of abstraction, conveying and depositing of water in line with volumetric instructions issued by TW – This may include a minimal flow for asset performance purposes
- Provision of data for system management purposes.

**Contract Term**

As a DPC Project the contract term will be expected to be between 25- and 35-years post construction. This may lead to establishing a termination value for the asset to transfer to TW at the end of the contract period.

**Contract Pricing**

Annual Unitary Charge – The annual unitary charge will be calculated to allow the CAP to service the financing of the asset and meet fixed overheads.

Operational Element – To reflect the variable demand profile and costs of requested pumping, this is best priced on a variable cost basis. In particular energy costs will be variable across the duration of the contract. Typically, activities such as this are priced in the contract with reference to agreed energy prices. Margins for these activities are set during the DPC competition.

### 10.3.6 Establishing Commercial Terms

Typically supply contracts would be put in place through procurement exercise where competition would allow charges regimes to be established in competition.

Competition for the DPC is a condition of using that method of procurement and should result in appropriate market rates being applied to the contract terms.

The Supply contracts between TW and UU/STW are not amenable to competition. It may be necessary therefore to rely on regulatory mechanisms to establish

1. Market rates of return on capital
2. Testing of costs and cost incentive/sharing mechanisms
3. Overall pricing arrangements including cost allocation model

# 11. STT System - Control / Governance

## 11.1 System Controller

At this stage in the Buyer / Seller model, we have included the discrete role for System Control. The purpose of the System Control is to ensure that the system remains within the environmental and operational parameters and that all requests for supply volumes are properly accounted for in terms of pricing and allocation of costs.

While the system remains relatively closed, i.e., with a defined number of sources and a single consumer of STT supplied water, then the functions of the system controller can be simply incorporated into the reporting and monitoring functions of the supply contracts and linked to the overall environmental governance of the Environment Agency. If in time the system becomes more open, through the introduction of additional consumers of water transported in STT assets, or through the introduction of additional water resources from third parties then a system controller function may have more application in balancing supply, demand and allocating costs across the relevant parties.

For example, in time of water stress there may be instances where abstraction from the Severn would be restricted. Permission to abstract will be governed by the procedures of the Environment Agency and so arrangements will be necessary to ensure that restrictions on abstraction are applied or more importantly relieved where additional water has been introduced by the STT sources. It should be noted that the role of System Control is distinct from that of the Environment Agency and we suggest they are carried out by distinct organisations.

# 12. STT System - Operating Code

## 12.1 Need for a STT Operating Code

Irrespective of which commercial model is implemented there is a clear need to put in place transparent charging and cost recover mechanisms to ensure that beneficiaries and suppliers are not disadvantaged by the STT system.

In line with other regulatory regimes this set of charging and use rules may be encapsulated by means of a charging code.

### 12.1.1 Purpose of the STT Operating Code

The purpose of the STT Operating Code is

1. To define how and in what form requests for water and transfers along the STT system can be originated by Requesting Parties

2. To set out the conditions that will determine network availability

3. The process for allocating resources where demand for water is greater than the available capacity of the system to transfer water or where water resources are less than demand

4. Definitions of relevant costs to be recovered through STT charges

5. Approach to recharging costs where actual usage varies from anticipated usage

6. Approach to ad-hoc use of system by users not joined into long term arrangements

The Code will be developed in detail after Gate 2 however high levels principles have been considered as a outline for the water companies to build upon and consider as part of the Codes development. Summarised as participants will:

- Work collaboratively for the benefit of the STT system and wider resilience measure for future trading of Water in England.

- Develop infrastructure in line with agreed sequence of events to enable the STT system to be developed in its entirety.

- Engage with dialogue and decision making at points where the code will need to be developed of changed to meet the future demands

# 13. Appendix A

## 13.1 Approach to Commercial Model

We developed a list of key characteristics which would consider the role of STT as a system and the development of STT as a RAPID project. The characteristics were as follows:

1. Efficient risk allocation
2. Clear + enforceable contractual terms
3. Clearly defined Roles and Responsibilities
4. No cross subsidy between regulatory areas
5. Investable (where applicable)

We considered three classes of commercial model as potential models for the STT Arrangements. These were draw up based on the above characteristics, previous project experiences in the infrastructure arena as well as considering the unique aspects of STT and the RAPID scheme, whereby multiple water companies are interacting and trading together. The three models were:

1. Joint Enterprise Model
2. System Operator Model
3. Buyer / Seller Models

Through the commercial development phase with stakeholders, options and alternatives of the Buyer Seller model were considered, leading to three sub buyer seller models being:

Buyer / Seller Model:

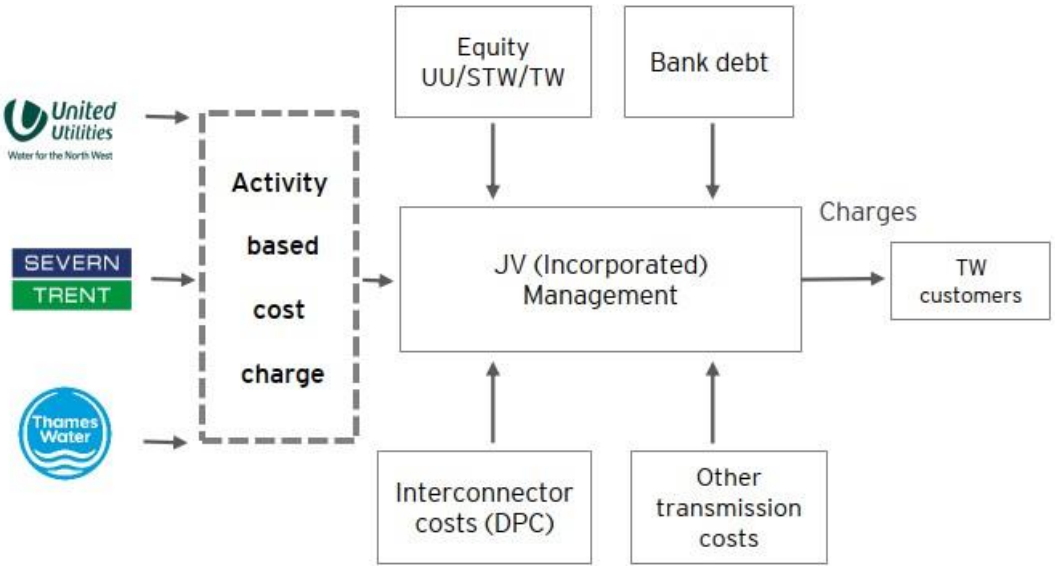
a. Simple Buyer Seller Model
b. Extended Simple Model
c. TWUL Recharge Model

### 13.1.1 Joint Enterprise Model:

The first model considered was a NewCo/Joint Venture approach that would manage all of the activities from each water company through to customers. This would work as an adjunct to TW, UU & STW. All stakeholders would be jointly and equally responsible for making whatever the desired output of water to Culham and onto Thames Customers.

All costs of the system would be accumulated into a scheme of charges that would be passed to the relevant customers. The JV would buy services from the interconnector which is procured as a supplier to the JV. It is therefore a mechanism of capturing all the costs that customers would be receiving - both the capability of water transfer to the SE and the actual volume of water being transported.

**Figure 9: Joint Enterprise Model**




The Joint Enterprise model was discounted as it created a scenario where each water company would be responsible for assets and operations in other geographies outside their own region which could not be ring fenced. Likewise, the procurement of the Interconnector by the JV was not seen as the most efficient way to deliver this vital yet ringfenced piece of infrastructure. The Model also creates a closed environment of joint ownership and responsibility, the equal requirements / responsibility required of each water company in this model would not reflect the actual need and usage requirements of each whereby it is TW who have the need / demand for the system with UU and STW sellers who have sources of water.

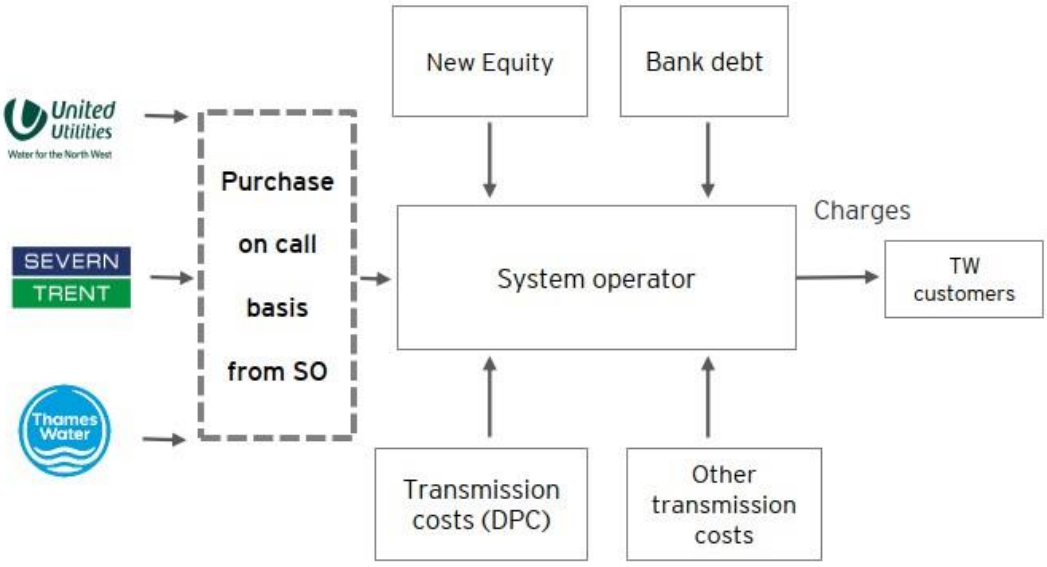
In addition to this the need for a system which is flexible and accessible to change for other potential customers in the future is made significantly more complex and contractually challenging in this JV environment.

### 13.1.2 System Operator Model

The second option proposed set out a structure which would see the development of an independent system operator to manage STT. This would work as an adjunct to TW, UU & STW. All stakeholders would be jointly and equally responsible for making whatever the desired output of water was down to Culham function like that of the Joint Enterprise Model.

All costs of the system would be accumulated into a scheme of charges that would be passed to TW customers as the user. The System Operator would buy services from the interconnector which is procured as a supplier to STT. It is therefore a mechanism of capturing all the costs that TW customers would be receiving - both the capability of water transfer to the Southeast and the actual volume of water being transported.

**Figure 10: System Operator Model**




As a stand-alone model the System Operator was discounted, like the Joint Enterprise it created a scenario where each water company would be responsible for assets and operations in other geographies outside their own region which could not be ring fenced. The DPC would be combined into the structure which is best felt procured directly by TW and creating a standalone function for STT was not considered to be the most effective approach.

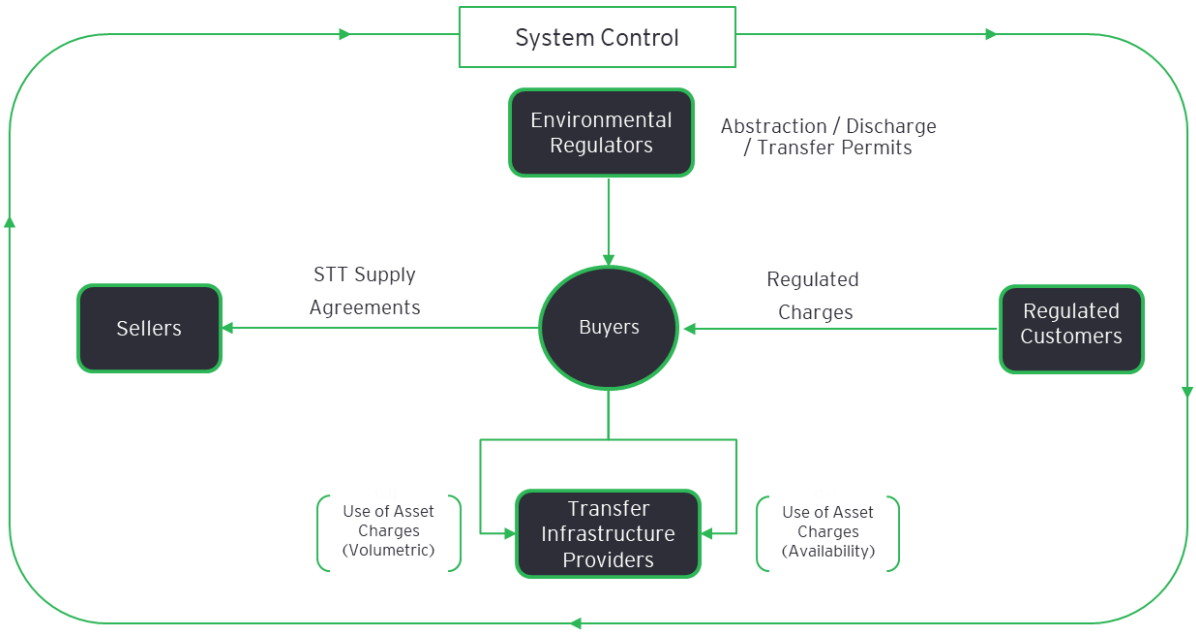
In addition to this the need for a system which is flexible and accessible to change for other potential customers in the future is made significantly more complex and contractually challenging in a System Operator environment of this structure.

### 13.1.3 Buyer / Seller Model:

The third model considered was a Buyer / Seller model whereby the Buyer TW would be central to the activities, with UU and ST acting as Sellers in the system. The Model would use a Code to manage the relationship between the parties and the principles of the Bulk Supply Agreements would be utilised in order to set out the agreements for quantum and charges.

System Control would be carried out by and independent team who would apply administrative and governance procedures to manage the ordering, supply and reconciliation of charges at appropriate junctures.

**Figure11: Buyer Seller Model**




Developing the Buyer Seller Model with stakeholders and considering the need for future residence and adaptability and series of sub–Buyer Seller Models were considered to understand which may be best suited to the STT System:

1. Simple Buyer Seller Model
2. Extended Simple Buyer Seller Model
3. TWUL Recharge Model

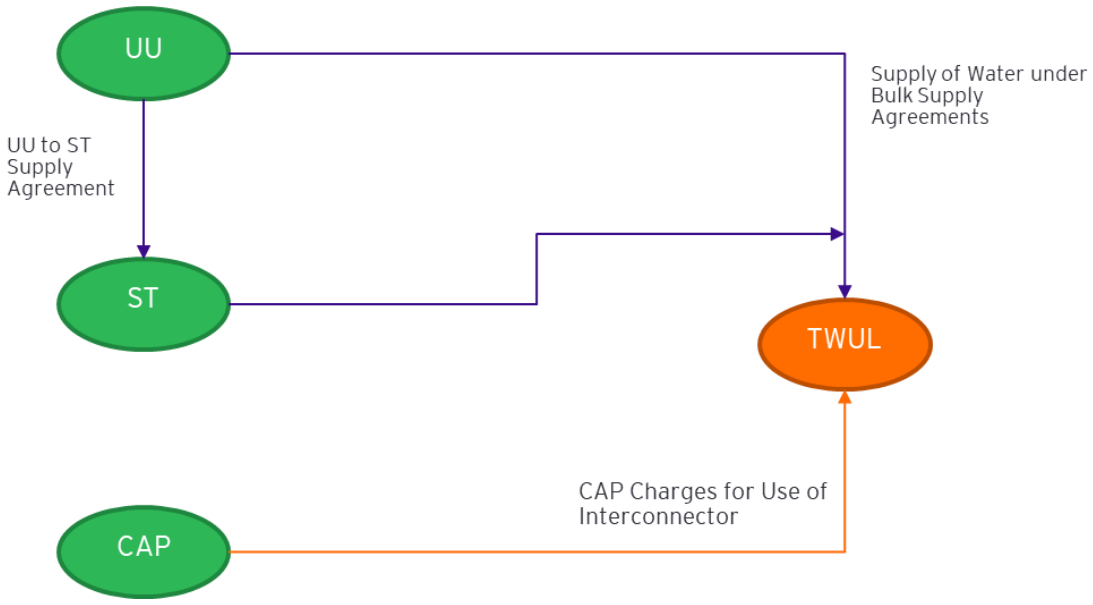
### 13.1.4 Simple Buyer Seller Model

The simple buyer and seller model that reflects the three-party nature of the initial system description STW, UU and TWUL. We will consider how this simpler system may be extended to include more counter parties and changes in operation in the future.

#### System Schematic

The key contractual arrangements employed in the buyer/seller system as set out and defined in the following schematic

**Figure 12: Simple Buyer Seller Model**




**Key elements of the Simple Commercial Model**

*UU to ST Supply Agreements*

The first supply abstraction area in which STT may provide additional resources is from the Severn but without use of the Interconnector to pass water to the River Thames. The commercial arrangement governing this element of the STT may be governed by a Bulk Supply Agreement between UU and STW. This would determine volumetric charges based on actual consumptions and a proportionate share of use of system charges based on fixed costs of system provision. That proportion would be determined by the expected use estimates underpinned by water resource management plans for the STT system as a whole (ie excluding costs that would be covered from other potential users).

**UU/STW Supply Agreements with TWUL**

These agreements provide the contractual basis for water supplies to be made on request between UU, STW and TWUL. They will govern:

- Unit pricing of water requested
- Basis of recovery for fixed costs (including cost adjustment mechanism)
- Request Procedures
- Availability Criteria and Permissions (as discuss in System Controls)
- Fair Allocation Procedures

It should be noted that in this model TWUL is the ultimate consumer of STT capacity and resources and so all costs will be recovered from Thames Customers unless fixed and variable costs are allocated to STW through expected and actual consumption prior to the use of the Interconnector.

### *CAP Charges for the Interconnector*

As discussed in Section 4 the procurement and payment for the Interconnector is most appropriately carried out by TWUL. As such TWUL will be subject to charges from the CAP.

It is unlikely that placing demand risk, ie that the CAP revenues only driven by volumes of water transferred through the Interconnector with the CAP will offer value for money to TWUL customers. This is because the demand for, and subsequently volumes of, water transferred are intermittent, uncertain and driven by weather and other factors. This is not a risk that the CAP could efficiently manage.

It is also the case that the use pattern of the Interconnector may present a challenge to the CAP to establish an annuitized operational cost profile. In particular the CAP will may be subject to variable energy costs which would be poor value for money to fix over the duration of the contract.

Based on the above we would expect CAP charges to consist of two elements:

1. A annual charge (independent on volumes) to allow the CAP to meet its fixed costs and cost of financing the construction of the asset

2. A Use charge based upon volumes transferred and priced on a cost incurred plus margin fixed at the time of the CAP procurement. Costs may subject to periodic review, but current energy price volatility may mean shorter periods of fixed pricing are appropriate.

## Buyer Recovery of STT costs.

Ultimately costs incurred by the buyers of STT outputs (both availability and volumes of water transferred) must be recovered from Customers. The following cost recovery elements should be included in the Licence Holders Charging mechanisms

- DPC Fixed charges – Recovered through existing ARD approach
- DPC Variable Charges – Recovered via ARD on expected use basis, adjusted in subsequent years for actual consumption
- Other STT charges included in regulated costs on expected use basis, adjusted for actual use in subsequent years.

## Assessment of the Simple Model

### *Advantages of Model*

The Simple Model reflects the STT system as currently envisaged with the three parties. Its primary advantage is that is illustrates how the core commercial arrangements between the parties can work.

## Efficient risk allocation

The model is based on the principles of efficient risk allocation, in particular

- The CAP is not required to finance risks it cannot control
- Water Providers are not required to provide water irrespective of the ability of the system to transfer that water or in conflict with their own network performance

### Clear Roles and Responsibilities

- Buyer and seller roles are set out clearly in contract

### No cross subsidy between regulatory areas

- Costs can be tracked directly to ultimate beneficiaries
- Cost reflective as beneficiaries will pay in proportion to the use of their system and for costs incurred in providing the benefits they obtain and not others

### Investable Solutions

- The structure allows for clearly defined revenue streams that are necessary to ensure a return on investment.
- Efficient Risk allocation allows for market pricing of capital
- Efficient risk allocation aligns to the regulatory

### *Disadvantages of Model*

The main disadvantage of this model is that it is that the STT systems is likely to be substantially more for reaching in extent than the three parties identified here. In particular STT is expected to afford resilience to the wider Southeast of England and not only TWUL customers.

It is also possible that water transfers to users relying only on the Severn to all the movement of water may take place in the future. As such the Simple model does not address future resilience directly.

### Conclusion of the Simple Model

Should the STT system be limited to providing services to only the three parties engage to date then this model meets the criteria of a successful commercial model. However, it is likely that the scope of STT will include a much wider pool of beneficiaries and as such adjustments to the simple model are necessary.

## 13.1.5 Extended Simple Model

The Extended Simple model involves creating commercial arrangements to all parties who, at the outset of the STT system implementation can be identified as beneficiaries. This can be shown in the following structure

**Figure 13: Extended Simple Model**

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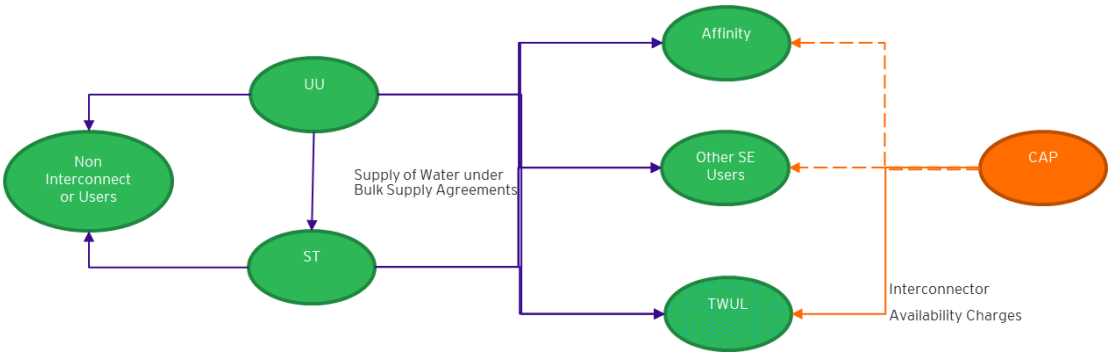



## Key Elements of the System

### Bulk Supply Agreements

In this model all parties who may seek additional water to be provided by the STT system will enter into Bulk Supply Agreements with the two potential providers of that water. While it is the case that SE water users may seek additional supplies from TWUL with its own resources, that is excluded from the STT system as is water already present in the SE region.

#### *Interconnector Charges*

In the extended model the question of the relationship between SE users, including TWUL must be addressed.

DPC as it is currently structured creates a contractual arrangement between a single Licence holder and aCAP. This reflects the monopolistic arrangements currently in the water system and the limited shared network arrangements in place. While it may be possible to structure a joint procurement of the CAP by all potential SE users, this presents a number of challenges

1. It raises the question of which network the DPC asset is part. Fractional ownership of a single asset is a new concept in the regulated system. This raises the question of the revisionary vale, who should pay it and what would the regulatory treatment of that asset be post DPC.

2. The CAP will have to accept multiple counter party risk

3. The procured contract would still require a variation mechanism to enable future additional users to have a direct relationship with the CAP.

As alternative to joint procurement of the CAP, it is possible that the contract could be structured that the DPC be procured by TWUL as a single contract party related to asset ownership. This simplifies and aligns the DPC arrangement to the current bilateral model of DPC. The CAP arrangement would be altered to reflect potential multiple uses so that other users are able to instruct the CAP to transfer water depending on their need.

To achieve a more diverse Instructing Party arrangement, conditions for party acceptance will be necessary but are likely to be based on the instructing party holding an appropriate water licence.

In the diagram above we have shown the main counter party arrangement between CAP and TWUL as a solid line. Other parties have a more limited Instructing party connection to the CAP ie they can issue an instruction to transfer water for which separate variable charges will be levied by the CAP.

Fixed charge from the CAP should be recovered in proportion to the expected use by all partied (TWUL and Instructing Parties). Any variation to between actual and expected usage should be accounted for by recharging of usage between the parties. This mechanism will be governed by the STT Charging Code and should apply to both fixed costs associated to the Interconnector and the fixed costs arising in the supplier networks.

***Supply Agreement Charges***

The primary charges governed by the supply agreement are expected to be the variable costs of supplies provided to parties. These charges may include network costs incurred to make surplus water resources available at the time.

In circumstances where multiple parties have a need to request STT additional supplies then the combined request will need to be allocated to each of the requesting parties under the terms of the individual contracts in place.

## Additional Parties to the System

The key advantage of this structure is that it enables a ore flexible approach to the use of the system. To incorporate a new party then the following arrangements would need to be amended

1. A new Bulk Supply Agreement between the new entrant and the respective suppliers

2. Incorporation into party as an Instructing Party for the Interconnector

3. Incorporation into the STT Charging Code so to enable charging to reflect actual to expected use to reflect the revised system

## Conclusions on the Extended Simple Model

The extended simple model as significant advantages over the simple model in that

- Ii is structured to allow expansion of the user base
- It allows for separation of the commercial arrangements for the supply of water from the commercial use of the interconnector
- It simplifies differential pricing of use between cost regimes

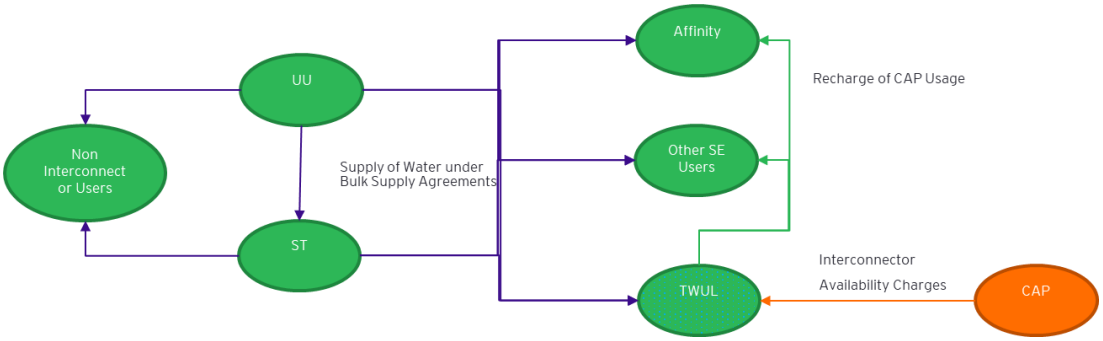
It should be noted however that there is an increased need to record and govern use of the system to allow for charges to be properly applied that reflect the overall use of and reliance upon the system.

This option will require the CAP agreement to be flexible and facilitate incorporation of new customers to the project company. This may lead to the CAP seeking a variation payment to reflect the more complex revenue arrangements however as this is only in relation to variable operation costs the impact on CAP financing should be relatively small.

### 13.1.6 TWUL Recharge Model

As an alternative to the Extended Simple Model, it is possible to consider the commercial arrangements on the following basis

**Figure 14: TWUL Recharge Model**




#### *Changes to the Extended Simple Model*

In this model the bi-partite arrangement between TWUL and the CAP is used to govern all charges for the use of the interconnector. This differs from the extended model in that there is no charges flowing directly from SE users (other than TWUL) and the CAP. Consequently the following mechanisms would apply.

- SE users would issue Instruct TWUL to transfer Water between Severn and Thames
- TWUL would Instruct the CAP to operate the Interconnector
- TWUL would pass CAP costs to the Requesting party on a volume basis
- Fixed charge between CAP to TWUL would be recharges on a proportionate beneficial basis to committed users
- Additional users would enter into CAP recharge arrangements with TWUL
- All users would have bilateral Bulk Supply Agreements in place with water suppliers
- All cost and revenue arrangements will be governed by the STT Cost Code

## Advantages of the Recharge Model

The advantages of the recharge model are

- It simplifies the CAP arrangements and reflects the Interconnector as a TWUL asset rather than a common carriage asset
- The CAP agreement does not need to adjust to incorporate additional users as TWUL remains the sole counterparty
- It does not require any additional recharge calculations to the Extended Simple Model
- It provides a single point of data collection as all instructions to transfer water are routed through a single point

## Disadvantages of the Recharge Model

The Primary disadvantage of the Recharge Model is that it places TWUL in a key role as a single point of entry for water to the SE. This potentially privileged position highlights the need for transparent and objective protection mechanism to be put in place to ensure that

- The role of sole instructing party does not translate into a point where water resources can be exploited to the advantage of TWUL
- That it does not preclude other water trading arrangements taking place within the wider water network.

## Conclusion on the Recharge Model

The Recharge model's main advantage over the Extended simple model is that it does not require any adjustment to the CAP agreement for the interconnector. This always remains a bilateral arrangement between TWUL and the CAP.

There secondary benefit of the Recharge model is that it requires TWUL to hold a complete record of Transfer requests and so facilitates charging and system control decisions.

The model does however increase the need for overall system rules to protect against possible preferential outcomes for TWUL as a single point of contact across the commercial arrangements.

# 14. Appendix B

### 14.1.1 Scope

Task 2, 1b, 3 and 4d (appendix document) are incorporated into this Report:

| Task Ref | Description |
|---|---|
| 1a | Provide a detailed delivery plan within 4 weeks award describing steps to meeting the scope for PMB and STT Commercial Steering Group approval |
| **2** | **Development of proposed commercial strategy document for STT** |
| **1b and 3** | **Selection of preferred tender model for STT, including proposed market engagement plan and procurement timeline** |
| **4d** | **Gate 2 procurement strategy document appendix and supporting chapter for Gate 2 report – first line assured first drafts** |
| **4d** | **Gate 2 procurement strategy document appendix and supporting sections for Gate 2 report – final versions (second and third line assured (if required) including three checkpoint review drafts.** |
| 4e | Redacted versions of Gate 2 supporting documentation |