SESRO

Supporting Document E-1: Procurement Strategy

Notice

Position Statement

- This document has been produced as the part of the process set out by RAPID for the development of the Strategic Resource Options (SROs). This is a regulatory gated process allowing there to be control and appropriate scrutiny on the activities that are undertaken by the water companies to investigate and develop efficient solutions on behalf of customers to meet future drought resilience challenges.

- This report forms part of suite of documents that make up the 'Gate 2 submission.' That submission details all the work undertaken by Thames Water and Affinity Water in the ongoing development of the proposed SROs. The intention of this stage is to provide RAPID with an update on the concept design, feasibility, cost estimates and programme for the schemes, allowing decisions to be made on their progress and future funding requirements.

- Should a scheme be selected and confirmed in the companies' final Water Resources Management Plan, in most cases it would need to enter a separate process to gain permission to build and run the final solution. That could be through either the Town and Country Planning Act 1990 or the Planning Act 2008 development consent order process. Both options require the designs to be fully appraised and in most cases an environmental statement to be produced. Where required that statement sets out the likely environmental impacts and what mitigation is required.

- Community and stakeholder engagement is crucial to the development of the SROs. Some high level activity has been undertaken to date. Much more detailed community engagement and formal consultation is required on all the schemes at the appropriate point. Before applying for permission Thames Water and Affinity Water will need to demonstrate that they have presented information about the proposals to the community, gathered feedback and considered the views of stakeholders. We will have regard to that feedback and, where possible, make changes to the designs as a result.

- The SROs are at a very early stage of development, despite some options having been considered for several years. The details set out in the Gate 2 documents are still at a formative stage and consideration should be given to that when reviewing the proposals. They are for the purposes of allocating further funding not seeking permission.

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 and Affinity Water's 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 and Affinity Water will be subject to the statutory duties pursuant to the necessary consenting process, including environmental assessment and consultation as required. This document should be read with those duties in mind.

GATE 2 PROCUREMENT STRATEGY REPORT FOR SOUTH EAST STRATEGIC RESERVOIR OPTION (SESRO)

12 October 2022

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Contents

Confidentiality

The content of this document relates to material or data that is still in the course of completion in travel towards future submissions for RAPID governance gateways or future consent applications; and should not be relied upon at this stage of development. We continue to develop our thinking and our approach to the issues raised in the document in preparation for future regulatory submissions.

This document may be referred to by RAPID in support of RAPID's review of the Gate 2 submission. The document may contain sensitive information and is not to be published or shared with third parties independently.

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Purpose and maturity of this document

This document has been produced as the part of the process set out by RAPID for the development of the Strategic Resource Options (SROs). This is a regulatory gated process allowing there to be control and appropriate scrutiny on the activities that are undertaken by the water companies to investigate and develop efficient solutions on behalf of customers to meet future drought resilience challenges.

This report forms part of suite of documents that make up the 'Gate 2 submission.' That submission details all the work undertaken by Thames Water Utilities Ltd (TWUL) and Affinity Water in the ongoing development of the proposed SRO. The intention at this stage is to provide RAPID with an update on the concept design, feasibility, cost estimates and programme for the schemes, allowing decisions to be made on their progress.

Should a scheme be selected and confirmed in the TWUL and Affinity Water final Water Resources Management Plans (WRMPs), in most cases it would need to enter a separate process to gain permission to build and run the final solution. That could be through either the Town and Country Planning Act 1990 or the Planning Act 2008 development consent order process. Both options require the designs to be fully appraised and, in most cases, an environmental statement to be produced. Where required that statement sets out the likely environmental impacts and what mitigation is required.

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The SROs are at a very early stage of development, despite some options having been considered for several years. The details set out in the Gate 2 documents are still at a formative stage.

Glossary

Acronym / term	Definition
AMP7	Asset Management Plan 7 - the water sector regulatory period from 2020-2025
AONB	Area of Outstanding Natural Beauty
AWRP	Advanced Water Recycling Plant
BEIS	Department for Business, Energy and Industrial Strategy
CAP	Competitively Appointed Provider (under a DPC arrangement).
Capex	Capital Expenditure – expenditure on fixed assets
CPI-H	Consumer Prices Index including owner occupiers' housing costs (the inflation index used to determine regulated revenues in the UK water sector)
DCO	Development Consent Order
DPC	Direct Procurement for Customers
FY	Financial Year
HARP	Haweswater Aqueduct Resilience Project
IP	Infrastructure Provider (under a SIPR arrangement)
IPA	Infrastructure and Projects Authority
JV	Joint Venture
LER	London Effluent Reuse SRO scheme
MEICA	Mechanical, Electrical, Instrumentation, Control, and Automation
Ml/d	Megalitres per day
OEM	Original equipment manufacturer
OFTO	Offshore transmission owner
Opex	Operating Expenditure – expenditure on operating costs
PR19	Price Review 2019 - the regulatory price review for the AMP7 regulatory cycle in the water sector
RAB	Regulatory Asset Base
RAPID	Regulators' Alliance for the Progression of Infrastructure Development
RCV	Regulatory Capital Value
RO	Reverse osmosis
RY	Regulatory Year
SESRO	South East Strategic Reservoir Option
SIPR	Specified Infrastructure Projects Regime
SoS	Secretary of State
SRO	Strategic Resource Options
T2AT	Thames to Affinity Transfer SRO scheme
T2ST	Thames to Southern Transfer SRO scheme
TLT	Thames Lee Tunnel
Totex	Total Expenditure (the sum of Operating and Capital expenditure)
TTT	Thames Tideway Tunnel
TWUL	Thames Water Utilities Limited
UK	United Kingdom
VfM	Value for money
WACC	Weighted Average Cost of Capital
WRMP	Water Resources Management Plan
WRSE	Water Resources South East (an alliance of the six water companies that cover the South East region of England, that develops the Regional Plan)

Acronym / term	Definition
WSR	Water Supply Reservoir
WTW	Water Treatment Works

1 Executive Summary

SESRO is a nationally important asset that will contribute to improved drought resilience across the south east of England. Further, the scheme has capex of approximately £2.3bn[1], an approximately 10-year construction period and an operating life of approximately 100 years, meaning that selecting the appropriate delivery route is important to achieving the best outcome for customers and other stakeholders.

The scheme progressed beyond the initial feasibility assessment at Gate 1 and is currently being jointly developed by Thames Water Utilities Ltd (TWUL) and Affinity Water. To support the Gate 2 submission to RAPID, Jacobs/PA Consulting have been commissioned to support the development of the procurement and commercial strategy for SESRO, building on the Gate 1 conclusions. This includes a more detailed assessment of eligibility under different procurement routes, development of an initial operating model and commercial structure, and a detailed plan to progress the procurement strategy to Gate 3 and beyond.

Procurement model assessment

We have assessed SESRO in relation to three potential models for delivery and operation:

1. In-house delivery;
2. Competitively tendered models:
    - Direct Procurement for Customers (DPC) model[2]; and
    - Specified Infrastructure Projects Regulations (SIPR) model.

This has included a more detailed assessment of the scheme in relation to Ofwat's size and discreteness criteria for DPC; an initial assessment of whether SESRO meets the 'tests' for specification under SIPR; and an initial analysis of the value-for-money (VfM) offered under different routes. We have also considered the potential financeability under different delivery models, and whether the implementation timescales of DPC and SIPR introduce significant risk to the completion of the scheme in line with the timings set out in the emerging WRSE Regional Plan.

DPC

In relation to the DPC eligibility criteria, our assessment concludes:

- With capex alone over £2bn, SESRO clearly meets the DPC £100m totex size threshold for DPC delivery set out in Ofwat's PR19 methodology, as well as the £200m size threshold set out in the draft PR24 methodology[3].
- SESRO is a relatively standalone raw water storage asset, with well understood, relatively straightforward interactions with beneficiary companies' water supply systems, and as such, SESRO passes the DPC 'size' and 'discreteness' criteria. We therefore consider it potentially suitable for DPC procurement.
- TWUL and Affinity Water have already undertaken significant work in relation to planning consent, and have pre-existing relationships with planning stakeholders, that would take a DPC CAP significant time and cost to replicate. Therefore, transferring planning responsibility to the CAP would not offer value-for-money. We have therefore ruled out the 'Early' and 'Split' DPC models, and assumed the Late model for our assessment.
- To inform our initial view of value for money, we have also undertaken initial modelling, which indicates that DPC has the potential to deliver lower costs to consumers than in-house delivery, if DPC delivers capex and opex efficiencies in line with PR19 assumptions. Value for money will need to be confirmed at future Ofwat Control Points.

SIPR

We note that SESRO was cited by ministers[4] in 2020 as a potential scheme that could benefit from the extension of the SIPR regulations originally introduced for Thames Tideway Tunnel (TTT), and that 'specification' under those regulations is an option that has been considered for the largest schemes. RAPID guidance for Gate 2 further requires an assessment of whether schemes could benefit from a licensed approach under the SIPR regulations,

[1] In 20/21 prices. All costs in this document are in 20/21 prices unless otherwise stated.
[2] Including the possible application of various Ofwat pre-defined DPC variants (Early, Late, Very Late and Split) to each scheme, or parts of each scheme. For the avoidance of doubt, this report is based on the DPC model characteristics as set out by Ofwat at PR19, which we refer to as the 'Standard Form' DPC model. Where appropriate we set out potential modifications to the Standard Form DPC model that may deliver improved value for money.
[3] Creating tomorrow, together: consulting on our methodology for PR24. Appendix 5 - Direct procurement for customers, July 2022
[4] https://hansard.parliament.uk/Commons/2020-06-10/debates/0D026C95-49D7-464C-9242-7B00C2A9B1FD/WaterIndustry?highlight=south%20east%20strategic%20reservoir%20option#contribution-F3241329-9150-4E23-98AE-8F86FE2EC2BE

and from separating the procurement of main works from the procurement of the financing (as was seen at TTT). This is considered particularly relevant for SESRO.

We have undertaken an initial assessment of whether SESRO meets the criteria for 'specification' set out in current SIPR legislation[5] - in particular, whether the scheme is of a size or complexity that would threaten the existing undertaker's ability to provide services for its customers. This is largely a subjective test, informed by relevant guidance, but our initial assessment indicates:

- At £2.3bn capex, SESRO by some distance is the largest SRO in terms of capex, the closest scheme being Severn to Thames Transfer. However, the 'scale' and construction risks are smaller than they were for the Thames Tideway Tunnel (the only project currently specified[6] under SIPR), which involved tunnelling under central London. Other factors (including SESRO's status as a scheme offering regional resilience benefits) may increase the perceived complexity of SESRO, compared with TTT.
- Our analysis of the impact of in-house delivery on Thames Water's financeability also suggests that while SESRO is a very large project, it could potentially be delivered in-house via the RCV, although this would require additional equity to be raised to maintain gearing. The credit ratings impact of SESRO will need to be fully assessed, irrespective of delivery route, taking into account Thames Water's financial position and wider context.

Thames Water have commissioned further advice on SIPR from Agilia Infrastructure Partners. This work has identified several key characteristics of SESRO (notably its size, the duration of construction, and its high capital gearing) that make SESRO potentially well suited to a SIPR approach, including a separate competitive procurement of the construction supply chain and finance. This conclusion is supported by our initial modelling, which suggests that delivery under the SIPR regime offers potential to deliver improved value for money to customers compared with both 'standard form' DPC and in-house delivery options. This is in part because SIPR is assumed to enable similar capex and opex efficiencies as DPC, as well as relatively lower financing costs due to the presence of the regulator.

Overall, based on our initial assessment we are not confident that the Secretary of State would consider that SESRO meets the 'size or complexity' test. Further work is needed to understand the strength of the case, as the scheme and its commercial model are developed. We note that Ofwat has made a recommendation to the Secretary of State for Business, Energy and Industrial Strategy (BEIS) that the 'size or complexity' test be removed from SIPR legislation. However, our assessment does conclude that value for money for customers (the second criteria) may be optimised if SESRO is procured under SIPR.

We therefore recommend that:

- The SIPR model be taken forward as the preferred model for SESRO;
- Further work with regulators is undertaken to understand the likelihood and potential timescales of any legislative change;
- An enhanced DPC model be developed as an alternative, with both models subject to market testing and detailed value for money modelling, as described below, ahead of a final decision at Control Point C.

Implementation timescales

The draft WRSE 'best value' Regional Plan indicates a required in-service date for SESRO of 2040. Based on an estimated construction and commissioning duration of approximately 10 years, the required contract award date for SESRO is approximately 2029. The estimated time to appoint a CAP under a DPC commercial model is 2-3 years, from Gate 3 when the preferred procurement model will be confirmed. The SIPR model under TTT took longer (c. 5 years), however this may be due to particular factors including the agreement of a Government Support Package which may not be required for SESRO. This suggests that there is likely to be sufficient time to implement either a SIPR or DPC model for SESRO without introducing unacceptable programme risk.

Next steps to confirm the preferred procurement model at Gate 3

Further work (including market testing and modelling) is required to test value for money assumptions, as part of Gate 3 development. In particular, this will focus on engaging with the construction supply chain and investor community to better understand how key scheme risks are likely to be priced under DPC and SIPR, how a DPC deal would be structured (including any enhancements to the standard form DPC), the benefits that SIPR may deliver which cannot be achieved under DPC (and any associated trade-offs in terms of the administrative and regulatory costs under SIPR) and the opportunities for driving greater SESRO-specific capex and opex efficiencies under either

[5] The Secretary of State or the Authority may exercise the power if they are of the opinion that i) the infrastructure project is of a *size or complexity* that threatens the incumbent undertaker's ability to provide services for its customers; and ii) the infrastructure project is likely to result in better *value for money* than would be the case if the infrastructure project were not specified

[6] Thames Tideway Tunnel SIPR specification information sourced from the *Thames Tideway Tunnel project specification reasons notice*, part of the *Thames Tideway Tunnel: project specification and preparatory work notices*, Department for Environment, Food & Rural Affairs, June 2014 Thames Tideway Tunnel: project specification and preparatory work notices - GOV.UK (www.gov.uk)

SIPR or DPC. This insight would then need to be reflected through in-depth financial modelling, in order to confirm the procurement route at Ofwat's Control Point C in 2024.

Operating and Commercial Arrangements

SESRO is a relatively passive asset, and its operations could be codified and automated based on a set of externally-driven parameters such as reservoir and river levels. It will pump water from the Thames to replenish the reservoir at times of high flow, and will release water back into the Thames at times of lower flow, supporting abstraction downstream (including for the lower Thames reservoir system). Southern Water is also expected to take water directly from the reservoir for treatment on site, as part of the Thames to Southern Transfer (T2ST) scheme – as shown in Figure 1 below.

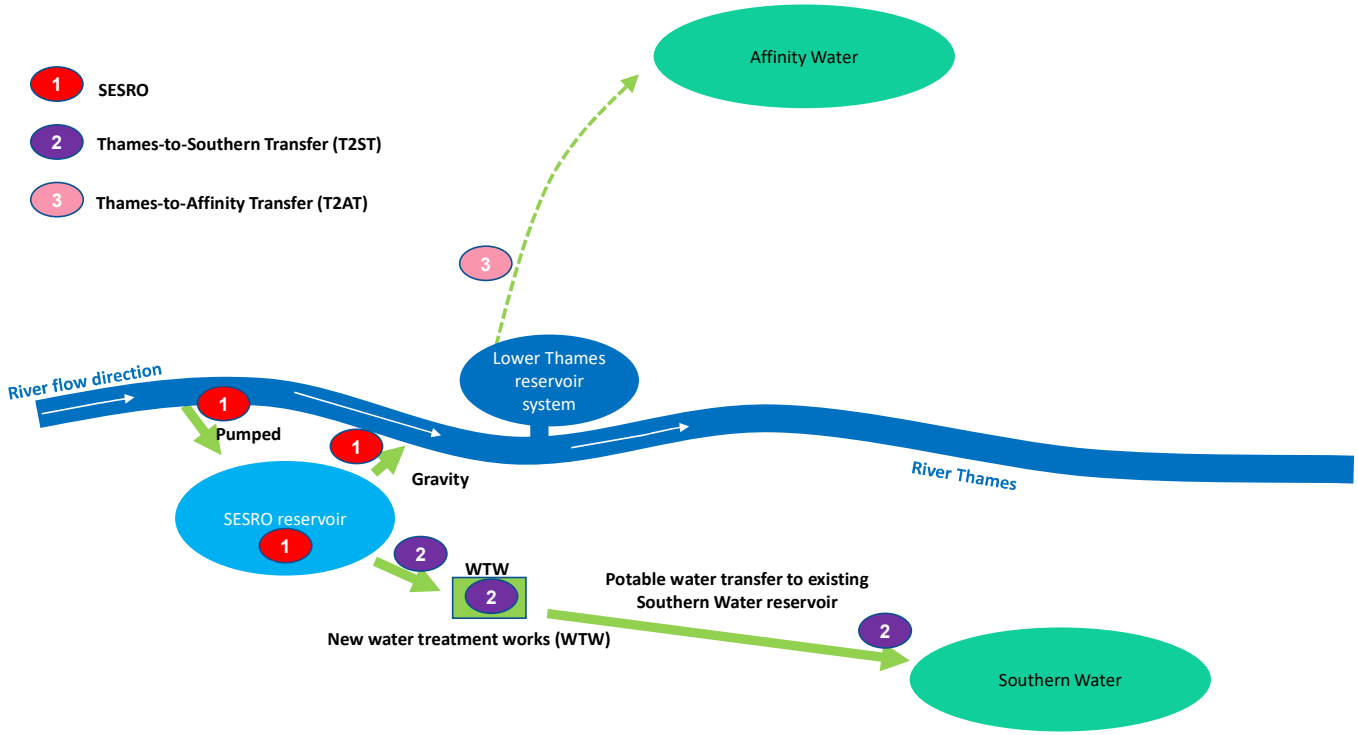


Figure 1 Simplified diagram showing the SESRO scheme, and connections to the River Thames, Affinity Water and Southern Water

We have explored two broad options for operation of SESRO:

- 'Independent' operation, where SESRO would be controlled under a pre-determined code (that could be overseen by Ofwat) operated based on existing operational drivers/constraints. Under these arrangements, TWUL, Affinity Water and Southern Water (as well as any additional parties who wish to 'import' water from SESRO in the future) would have a direct agreements with the SESRO operator.
- Operational control by TWUL, with bilateral BSAs between TWUL-Affinity Water and TWUL-Southern Water (as well as between TWUL and any new importer). TWUL would ultimately determine (through bi-lateral negotiation) how each BSA could be modified or additional BSAs agreed with new parties.

It is too early to definitively conclude which option is more appropriate at this stage. However, key considerations include (a) the potential for new importers to offtake from SESRO, and (b) the benefits and risks of a multilateral code-based vs. bilateral contract-based arrangement. It is also possible that the operating regime of SESRO may change over time, and that actual usage may differ markedly from currently anticipated usage once it becomes a 'live' source for different water companies to incorporate into their overall water supply system.

Future commercial arrangements for SESRO will include a fixed capacity charge, and variable volumetric charges, where the capacity charges will be significantly greater than the volumetric charges. Charges could be apportioned between different customers of companies benefiting from the enhanced drought resilience provided by SESRO, using either a pre-determined, fixed ratio based on a combination of projected resilience benefits and planned usage, using a ratio based on actual usage, or a combination of both, and could include flexibility to evolve over time as appropriate. The apportionment mechanism should also consider intergenerational fairness, the timing at which different customer gain access to the reservoir, and the need for stable, predictable bill impacts and revenues. Further, the apportionment mechanism should take into account the impact on investor confidence in future revenues, and the effect of this on finance costs and overall cost to customers of the scheme. Further analysis of future usage of SESRO under different scenarios and engagement with TWUL, Affinity Water and Southern Water towards Gate 3 will enable agreement as to the most appropriate SESRO operating and commercial arrangements.

Promoter assessment

- The current proposed approach for SESRO promotion post-Gate 2 is for TWUL, Affinity Water and Southern Water to jointly sponsor the scheme (as key beneficiaries and funders), with TWUL taking single point accountability for delivery of SESRO under the preferred procurement model.
- We recommend that TWUL works to develop the most appropriate post-Gate 2 organisational structure for this arrangement including agreeing clear responsibilities and accountabilities between the various organisations to streamline governance, decision-making and delivery.

Forward plan

- We have worked with the SESRO Programme Manager to set out a plan for developing these proposals further through Gate 3, including the Ofwat Control Points B and C, as shown in Figure 12 in Section 8.2. We recommend that Ofwat 'Control Point B' should follow soon after Gate 2 – drawing on the Gate 2 Procurement Strategy and draft WRMP to assemble a Strategic Outline Case.
- We also recommend early market engagement with investors and the construction supply chain to further understand key commercial risks (including how they would be treated and priced under different models) and gain further insight into the potential structure of both DPC and SIPR models. This will be used to inform more detailed financial modelling to provide robust evidence for the comprehensive value for money assessment required at Control Point C in mid-2024, which would confirm the preferred procurement model and associated plan.

Table 1: Summary of Gate 2 assessment for the SESRO scheme

		SESRO
DPC (Late model)	Size	The scheme significantly exceeds £100m totex
	Discreteness	There are no significant challenges to the discreetness test, with any identified challenges able to be mitigated through the contract.
	Implementation timescales	There are no significant challenges to developing and procuring a DPC model within the timescales
	Value for money	Our Gate 2 assessment indicates that DPC may deliver better overall value for money for customers than in-house delivery, but only under a 'best-case' combination of low finance costs and significant capex efficiencies. However, further investigation, including detailed commercial risk analysis for the scheme and discussions with potential bidders and specialist contractors are required ahead of Gate 3 to validate whether this is achievable.
SIPR	Size or complexity	Our assessment is not conclusive on whether SESRO would meet the 'size or complexity' test. We note that Ofwat has made a recommendation to the Secretary of State for Business, Energy and Industrial Strategy (BEIS) that the 'size or complexity' test be removed from SIPR legislation. Our analysis indicates that SIPR could offer improved value for money for SESRO, and therefore we recommend its adoption as the preferred approach, subject to market testing and validation of value for money.
	Implementation timescales	There is expected to be sufficient time to implement a SIPR model without introducing unacceptable programme risk
	Value for money	Our Gate 2 assessment indicates that SIPR could deliver better overall value for money for customers than either DPC or in-house delivery, but further investigation of the costs and benefits of SIPR is required, as are any potential benefits that could be achieved through modifications to the standard DPC framework.

RAG rating definitions	
	Procurement model does not satisfy the criteria and should be dis-counted from consideration post-Gate 2.
	Procurement model satisfies the criteria based on information available at this stage, however there are some challenges to its viability that need further work to conclusively resolve.
	Procurement model satisfies the criteria.

2 Introduction

Ofwat/RAPID requires water companies to consider whether large, discrete water and wastewater projects could be delivered at better value for money for customers by appointing a third party to deliver these projects through a competitive tendering process. The available procurement models for appointment of a third party to design, build, finance and operate (or a subset of those activities) each of these projects are the:

1. Direct Procurement for Customers (DPC) model[7]; and
2. Specified Infrastructure Projects Regulations (SIPR) model.

To assist companies decide the appropriate procurement route to adopt, Ofwat/RAPID has issued guidance to water companies to follow when evaluating whether individual projects should be competitively tendered or not. This guidance sets out a multi-step process, whereby projects proceed through a series of "gates" to determine whether to competitively appoint a third party and the appropriate route for procuring that third party.

The South East Strategic Reservoir Option (SESRO) scheme is proposed in the WRSE plan as a bunded reservoir near Abingdon in Berkshire, of up to 150Mm3. The scheme has a range of supply options to provide long-term resilience through several potential projects across the south east of England, including supporting transfers to Affinity Water and Southern Water.

Table 2 presents key details on the estimated construction timeline and costs associated with this scheme.

Table 2: Construction timeline and project cost estimates (20/21 prices) for the SESRO scheme

Scheme	Capital expenditure	Fixed opex (annual)	Variable opex (annual)	Start detailed design	Begin construction	End construction	Start of operations
SESRO (150M m3)	£2,308m	£4.1m	£1.0m	2029	2030	2040	2040

Background: Gate 1 assessment

At Gate 1, the SESRO scheme was assessed using the criteria set out by Ofwat for the assessment of DPC suitability (size, 'discreteness' and value-for-money), and using qualitative value-for-money and deliverability criteria to assess alternative models. To provide some insight into the value-for-money of different models, a high-level commercial risk and pricing assessment was used, and for DPC models, an assessment was undertaken by TWUL in their PR19 document CSD011-Direct Procurement for Customers.

The assessment against the criteria was then consolidated to provide an overall RAG-rating of the suitability of different models for the SESRO scheme. The summary of the Gate 1 assessment, outlined in Table 3, shows that Late/Very Late DPC models, and the 'Collaboration JV' variant of in-house delivery models were considered to potentially be well-suited to delivery of SESRO. This was based mainly on a very early, high-level assessment of the value for money potential under these models. Typical current in-house delivery models were considered viable only if the financeability and management challenges of such a large-scale, multi-party scheme could be overcome. The Early and Split variants of DPC were not considered viable, as it was not considered feasible to transfer SESRO's significant planning risks to a third-party provider at this stage of the scheme. Finally, it was considered unlikely that SESRO would satisfy the SIPR criteria. At the time of the Gate 1 report, there also did not seem to be potential to expand the applicability of SIPR to include projects like SESRO, and therefore SIPR was considered unfeasible.

[7] Including the possible application of various Ofwat pre-defined DPC variants (Early, Late, Very Late and Split) to each scheme, or parts of each scheme

Table 3: Summary of the Gate 1 procurement model assessment for SESRO

Procurement Models	Assessment of Procurement Models for SESRO (at Gate 1)	Rating (Gate 1)
Typical current models	SESRO is a £multi-billion totex investment across a 25-year lifecycle. It is likely that this would be a significant investment for one water company to carry on their respective balance sheet. It is foreseeable that the function of the reservoir may also introduce some challenge in developing the inter-company regulatory, operational, and commercial arrangements to enable the reservoir to operate as a resource for resilience for multiple companies across the south east of England.	
Early DPC	The Gate 1 process agreed that there would need to be significant early involvement from water companies in the early stages of developing this project. This would be significant for gaining appropriate consents, overcoming early stakeholder objections, land access, environmental impacts, potential for public enquiry, early design feasibility, and managing public perceptions. The early DPC model would require planning risk to be transferred to the CAP, which would not deliver value-for-money as significant planning work has already been undertaken.	
Late/Very Late DPC	These models avoid the need to transfer planning risk to the CAP, which is the key disadvantage of the early DPC model. Previous value-for-money assessments undertaken by TWUL indicated that the DPC model could offer good value-for-money. Note that this analysis needs to be reviewed to ensure that it fully considers the complexity of operating a multi-party reservoir; however, at this stage the late/very late DPC models are considered likely to be well-suited to the SESRO scheme.	
Split DPC	Similar to the 'Early' DPC model, the split DPC model would require planning risk to be transferred to the CAP. As significant planning work has already been undertaken by TWUL, transferring this to a CAP would likely either require the CAP to re-do this planning work, lengthy due diligence and/or a risk premium, which will therefore impact value for money.	
Collaboration JV	Collaboration between water companies through the creation of a Special Purpose Vehicle could 'compartmentalise' scheme commercial risk, investment risk and offer some financial protection. It will also enable capability of both water companies to be cooperatively applied, and the flexibility to involve the supply chain where appropriate, through the project life cycle to overcome the early planning risks through to construction.	
IP Model	This would require a licenced service provider which, through the size of the scheme, would need regulatory endorsement. At the time of the Gate 1 report, it was considered unlikely that SESRO would satisfy the SIPR criteria, and therefore this model was not considered feasible.	

RAG rating definitions	
	Major challenges to the viability of the procurement model without obvious, straightforward solutions at this stage
	Minor challenges to the viability of the procurement model without obvious, straightforward solutions at this stage
	No significant challenges to the viability of the procurement model at this stage, or straightforward solutions to challenges are obvious

Our approach and structure of this report

Since Gate 1, it has emerged that HM Government is considering whether the SIPR regime should potentially be modified so that it could be applied to a wider range of projects.[8] Accordingly, while it was ruled out at Gate 1, for Gate 2 we have again assessed SESRO's suitability for procurement under a licensing model (such as was used for Thames Tideway Tunnel), and whether SESRO meets the criteria for 'specification' set out in current legislation.[9]

Specifically, to support TWUL's and Affinity Water's Gate 2 submission, Jacobs/PA Consulting has been commissioned to undertake the Gate 2 procurement and commercial assessment through the following:

- Expanding upon the overarching scheme assessment at Gate 1 by undertaking a specific assessment of the SESRO SRO option against in-house, DPC and SIPR models[10];
- Undertaking a qualitative value for money analysis supported by high-level quantitative modelling, to assess potential value for money of the DPC model (rated 'green' for suitability at Gate 1);
- Adding further granularity to the viability assessment of different models by evaluating additional criteria including 'Implementation Timescales' and 'Financeability' and dividing 'value-for-money' into two dimensions – 'cost-to-customers' and 'water resource value and broader value' to customers.

To address this scope of work, the remainder of this report is structured as follows:

- **Section 3 – Framework for assessing eligibility for DPC and SIPR:** Describes the criteria against which the SESRO scheme is assessed to decide whether to adopt DPC or SIPR, or to maintain in-house delivery, and the assessment framework and methodology we have used.
- **Section 4 – Assessment of procurement models**: Discusses our assessment of whether the SESRO scheme satisfies the criteria for DPC and SIPR and recommends whether to proceed to Gate 3 or not.
- **Section 5 – Scheme promoter options and operating arrangements:** Outlines the preferred promoter approach for the schemes, and indicative operating and commercial arrangements.
- **Section 6 – Risk allocation:** setting out the high-level indicative allocation of risks between TWUL and the contractor for the scheme under its preferred procurement approach.
- **Section 7 – Operating and commercial arrangements:** Outlines the indicative operating and commercial arrangements between TWUL, Affinity Water and Southern Water for the scheme.
- **Section 8 – Procurement risks, plan and market engagement:** Key actions to be taken forward beyond Gate 2, including responding to revisions of the WRSE demand requirements, operational constraints, further development of the value for money assessment, and additional market engagement.

[8] Further, since Gate 1, RAPID's December 2021 consultation document (*The regulatory and commercial framework for strategic water resource solutions – a consultation*, RAPID, December 2021) clearly states that SIPR should be considered further.
[9] The Secretary of State or the Authority may exercise the power if they are of the opinion that i) the infrastructure project is of a *size or complexity* that threatens the incumbent undertaker's ability to provide services for its customers; and ii) the infrastructure project is likely to result in better *value for money* than would be the case if the infrastructure project were not specified
[10] Re-considering the SIPR model based on updated RAPID guidance in their December 2021 consultation document (*The regulatory and commercial framework for strategic water resource solutions – a consultation*, RAPID, December 2021)

3 Framework for assessing eligibility for DPC and SIPR

The eligibility criteria for competitive tender models (DPC and SIPR) recommended by RAPID is summarised below:

- **Size:** the scheme must be at least £100m totex (based on PR19 guidance – Ofwat's draft PR24 methodology sets the size threshold at £200m totex).
- **Discreteness:** the scheme should be sufficiently discrete from the wider network to support the CAP delivering the contracted outcomes, as described below.
- **Value for Money:** DPC should offer the potential to deliver a lower cost to customers (informed by Ofwat's specified assumptions, set out at PR19).

Consideration of different DPC tender models

There are four Ofwat pre-defined variants of DPC: Early, Late, Very Late and Split. The Early and Split variants involve planning activity being transferred to the DPC CAP. In the case of SESRO, significant work in has been undertaken by TWUL and Affinity Water already as part of the early RAPID gated process, and (in the case of TWUL), several years of ongoing scheme development prior to the introduction of the SRO process. Further, SESRO assets will be constructed in TWUL's region, meaning that TWUL has existing relationships with key stakeholders in the planning process (for example local authorities and customer groups). Conversely, a CAP delivering the scheme would need to build these stakeholder relationships, spend time and effort developing an understanding of key planning issues identified to date, and place significant trust in the work already undertaken by TWUL and Affinity Water. Based on this, we conclude that the CAP is likely to be less capable of managing planning risks than TWUL/Affinity Water, and therefore there is unlikely to be significant benefit or value-for-money in transferring planning responsibility to a CAP. This effectively rules out the Early and Split DPC variants for SESRO.

The Late DPC model involves the transfer of the scheme to the CAP before the detailed design and construction stage, while Very Late DPC involves the transfer of a completed scheme once it is commissioned and ready for operation. The Very Late DPC model may offer reduced finance costs as the CAP would not have to bear any construction risk, however the Late DPC model offers the greatest opportunity for the CAP to drive improved capex and opex efficiencies. The DPC assessment in this report focuses on the Late DPC model, as this offers the greatest scope for discussion of different aspects of the DPC model that may influence overall value for money.

SIPR model assessment criteria:

The criteria for specifying a project under SIPR are set out in The Water Industry (Specified Infrastructure Projects) (English Undertakers) Regulations 2013, as follows:

- *The Secretary of State or the Authority may exercise the power …… if the Secretary of State or the Authority respectively is of the opinion that:*
  - *i. the infrastructure project is of a **size or complexity** that **threatens the incumbent undertaker's ability to provide services for its customers**; and*
  - *ii. specifying the infrastructure project is likely to result in better **value for money** than would be the case if the infrastructure project were not specified, including taking into account:*
    - *i. the charges fixed or likely to be fixed under Chapter 1 of Part 5 of the Act(9) (financial provisions, charges); and*
    - *ii. the powers of the Secretary of State under section 154B of the Act(10) (financial assistance for major works).*

We have used these criteria to assess whether SESRO is eligible for SIPR specification under current legislation.

We set out below how we have approached assessing whether this scheme meets these criteria or not.

3.1 Size, discreteness, and complexity

Whether a project meets the size criteria for DPC requires calculation of the present value of whole life capex and opex to see if that value exceeds £100m totex threshold (PR19). We have also considered schemes in relation to the higher £200m threshold set out in draft PR24 guidance.

Whether a project meets the discreteness criteria for DPC requires a more qualitative assessment of various factors, set out in KPMG / Ofwat's 'Direct Procurement for Customers: Technical Review' report[11], including:

1. Stakeholder interactions and statutory obligations;

[11] https://www.ofwat.gov.uk/wp-content/uploads/2017/12/DPC-A-technical-review-FINAL_08.12.17.pdf

2. Interactions with the network;
3. Contributions to supply/ capacity and ability to specify outputs; and
4. How well asset and operational failures of the scheme are understood.

Whether a project meets the size or complexity criteria for SIPR depends on whether the project "*threatens the incumbent undertaker's ability to provide services for its customers*". We use a similar risk-based approach to that applied for the Thames Tideway Tunnel (TTT) to compare each project's 'size or complexity' to that of TTT, the only scheme specified under SIPR to-date. This includes a specific focus on 'scale risk', including an assessment of whether the financeability of the incumbent undertaker (TWUL) would be endangered by undertaking the project itself. To address this issue, we have held discussions with both the Treasury and Finance Teams from TWUL about the impact of delivering the project in-house on TWUL's forecast financeability, and undertaken a desktop exercise to assess each scheme's impact on typical financeability metrics.

3.2 Implementation timescales

To inform our assessment of implementation timescales, we consider the time taken to implement the SESRO scheme under each potential procurement model. Based on experience with models similar to DPC, and insight from the Thames Tideway Tunnel and United Utilities' HARP scheme, we assumed a minimum duration of approximately three years to reach CAP award from this point under a DPC model, and approximately three to five years to reach IP award under a SIPR model, starting after confirmation of the preferred procurement model at Gate 3 (in early 2024).

3.3 Value for Money (VfM)

We have assessed VfM through two 'lenses':

- Assessing the 'cost to customers': i.e. the potential impact on customer bills, and
- Water resilience/resource value and broader value: the resilience/resource benefits customers receive from the water asset being able to produce sufficient water when required; and the 'wider value' benefits delivered to customers from the SESRO scheme.

To assess the cost to customers, at this stage of scheme development, we have considered how much higher or lower the financing, capex and opex would be under DPC and SIPR compared to in-house delivery. We discuss potential opex and capex savings based on an assessment of potential savings for various sub-categories of costs. Our assessment of financing costs is based on high level assumptions, in line with our scope of work. We have not spoken to prospective DPC or SIPR bidders to inform our work at this early stage, so our work is based on desktop analysis, research and discussions with TWUL and its other advisers.

To assess water resilience/resource value, we have examined the benefits of the scheme to customers through the provision of drought resilience and ongoing water resource supply, and assessed whether there would be a material difference in these benefits under different procurement models.

We have taken a similar approach to broader value - meaning the wider benefits delivered to customers over and above the core 'water resource' value the scheme delivers. Examples of potential broader value at SESRO include social and economic benefits such as the recreational facilities associated with the new reservoir, flood defence for local residents enabled by the access road bund, and the creation of new and improved natural wetland habitats.

3.4 Evaluation framework

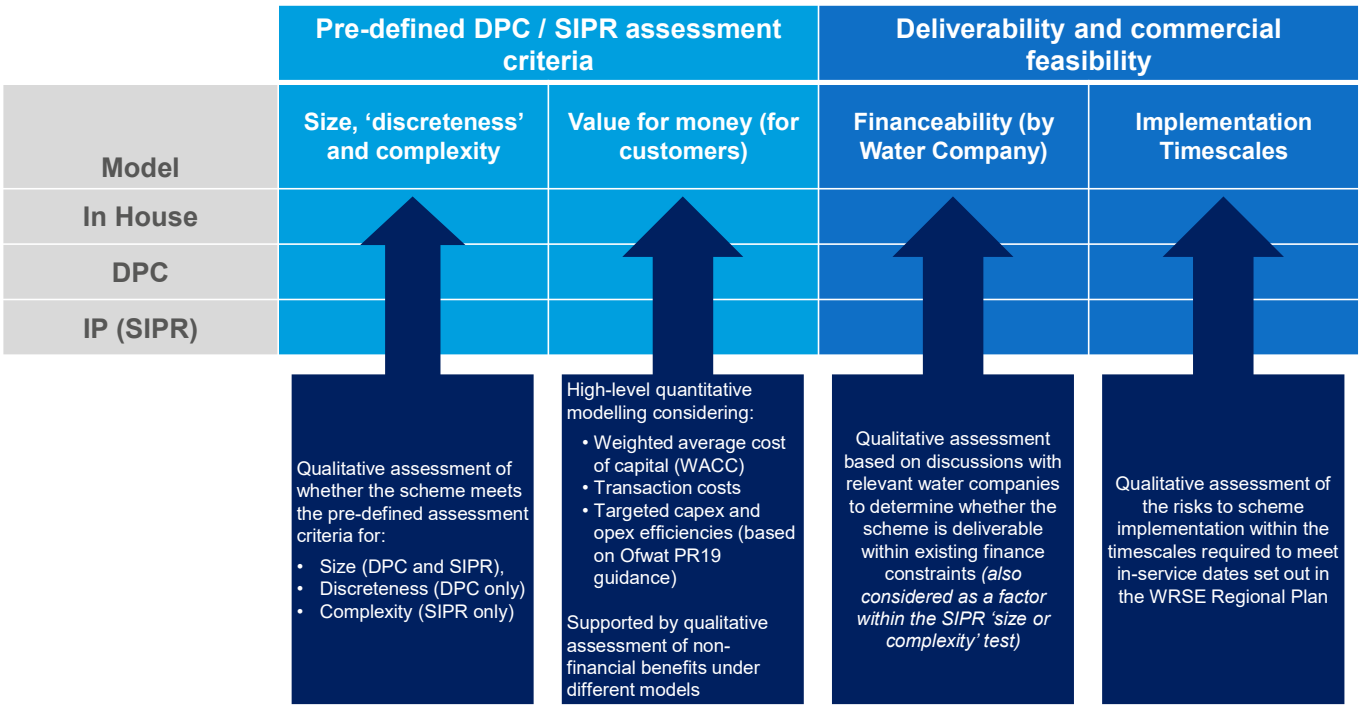
We have undertaken high level financial modelling of the SESRO scheme to inform our assessment of eligibility for DPC and SIPR, but many of the criteria discussed above can only be assessed qualitatively. For those criteria we have undertaken a Red-Amber-Green style evaluation, using the definitions below:

- Red: Procurement model does not satisfy the criteria and should be dis-counted from consideration post-Gate 2.
- Amber: Procurement model satisfies the criteria based on information available at this stage, however there are some challenges to its viability that need further work to conclusively resolve.
- Green: Procurement model satisfies the criteria.

Figure 2 below, which integrates pre-defined assessment criteria for both the DPC[12] and SIPR[13] models with our own defined criteria for deliverability and commercial feasibility, summarises our assessment framework and methodology.

In the following chapters we discuss whether SESRO satisfies the eligibility criteria for DPC and SIPR outlined above using our assessment framework.

Figure 2: Assessment framework for commercial models



[12] As set out in Ofwat's 'Direct Procurement for Customers: Technical Review' report
[13] As defined in the Water Industry (Specified Infrastructure Projects) (English Undertakers) Regulations 2013

4 Assessment of procurement models

In this section we provide some background on the SESRO scheme and set out our assessment of whether the SESRO scheme is eligible for DPC and/or SIPR.

4.1 SESRO scheme overview

The SESRO scheme is proposed as a new bunded reservoir near Abingdon in Berkshire. This scheme has a range of supply options to provide long-term resilience through several potential projects across the south east of England.

This scheme is expected to benefit several water companies, depending upon the preferred option chosen. Water would be abstracted from the River Thames at times where conditions, seasonal variations and volumes are favourable, stored, and then resupplied when required, for example at times of drought. The water abstraction from the Thames plus some raw water treatment is included within the scheme. Abstraction and resupply would be through new underground pipelines connecting the river and reservoir and connecting to an associated SRO Scheme (Thames to Southern Transfer).

A number of different size options have been considered. The WRSE Best Value Plan has selected SESRO with a 100Mm3 capacity, as marginally better value than the 150Mm3 option. On that basis, approximate utilisations for the shared assets under 'Branch 4' of the WRMP are: Thames 40%, Southern 30%, Affinity 30%. However, this will be subject to consultation and confirmation in the final WRMP, subject to endorsement by the Secretary of State.

From a nature and recreational perspective, there are significant potential benefits for society and local communities associated with the proposed scheme. Reservoirs can add significant biodiversity to the natural environment benefitting a wide range of activities both on and around the water.

Figure 3 provides a schematic diagram of this scheme.

Figure 3: SESRO scheme

Key elements of this scheme include:

- Construction of a bunded surface water reservoir of up to 150Mm^3
- Access road to the reservoir (which could also act as flood defence to Abingdon)
- Pumping station adjacent to the reservoir to pump water to/from the River Thames
- Underground pipeline/tunnel connecting to the River Thames south of Abingdon
- Spillway canal and amenity connecting to River Thames providing emergency relief of the reservoir should the level need to be dropped quickly
- Road diversion to permit construction
- Railway siding to support construction and additional/modified rail lines (required to enable the proposed construction methodology, that utilises material delivery via rail)
- Storage for flood compensation
- Settlement Ponds

Excluded from the scope of the SESRO scheme at this time is a raw water take-off from the reservoir to the boundary of a potential future Water Treatment Works supplying Southern Water (which is part of the Thames to Southern Transfer (T2ST) SRO scheme). This raw water take-off scope may be added to the construction programme depending on how the T2ST SRO scheme progresses. Constructing this raw water take-off early will avoid future disruption of the area around the reservoir including the bunded banks and landscaping, however without certainty of the project going ahead costs may become abortive and would require funding outside of the SESRO SRO until they could be attributed to the T2ST SRO scheme.

4.2 Size, discreteness, and complexity

4.2.1 DPC assessment

In this section we assess this scheme against the key areas outlined in Ofwat's definition of project size and discreteness as set out in their 'Direct Procurement for Customers: Technical Review' report. This assessment covers: i) size; ii) stakeholder interactions and statutory obligations; iii) interactions with the network; iv) contributions to supply / capacity and ability to specify outputs; and v) asset and operational failures. Our assessment is summarised in the table below.

Table 4: Detail of the SESRO project size and discreteness criteria as measured against Ofwat's 'Direct Procurement for Customers: Technical Review' report

Size		• Scheme exceeds £100m totex, and therefore meets this requirement
Discreteness	**Stakeholder interactions and statutory obligations**	• Resilience asset which '*materially contributes towards the appointee meeting statutory obligations*' • However, these obligations are not as dynamic as for (for example) transfer assets. The triggers for use are clearly definable and therefore it is expected that these could be clearly written into a DPC contract. • Therefore, this is not a 'blocker' for DPC, but does raise some issues that will need to be mitigated through the DPC contract. • The design for the access road for the reservoir may form a flood defence barrier for local residents. This could introduce significant interactions and obligations on the part of a CAP to maintain and operate this protection on behalf of the water company. • Logistical and operational risks around the delivery of materials to the site via rail and road; the quality and use of existing ground; and the ability to fill the reservoir and remain compliant with regulatory, compliance and operational requirements.
		• As a raw water source, by Ofwat's definitions this is an asset that would have "limited or marginal impact on the appointees' ability to meet its statutory obligations (e.g. non-potable or raw water sources)"
	Interactions with the network	• There will likely be a future connection to Southern Water's potable treatment plant as part of the Thames to Southern SRO. This will be a direct feed, however the reservoir will provide a huge storage volume mitigating any risk of supply should this issue arise.
		• Very well understood interactions (inputs and outputs) • Well understood and manageable interactions with the appointees' network. • Capacity is shared by multiple appointees • 'Passive' asset with operational triggers mainly defined by river levels • SESRO is a relatively uncomplex resilience type of asset
	Contributions to supply/ capacity and ability to specify outputs	• Capacity well understood • Triggers for operations clearly aligned to flow in River Thames and demand of Thames to Southern Transfer • Asset is fully operational and will build up water reserves during periods of higher volume, and restore capacity during periods of lower volume (for example, in the event of a drought)
	Asset and operational failures	• Well understood assets • Strategies for asset failure built in with measures such as spillway back to River Thames and rapid level drop in event of bund failure • Assets where operational failure risk is well understood, and mitigations well established for similar assets • Well-developed market or technical supply chains with strong experience of similar project delivery.
Discreteness summary		**There are no significant challenges to the discreetness test, with any identified challenges able to be mitigated through the contract.**

4.2.2 SIPR assessment

As set out in Section 3, a key criteria for a scheme to be specified under SIPR legislation is that it is of '***size or complexity** that **threatens the incumbent undertaker's ability to provide services for its customers***'. This test is applied by the Secretary of State (on the advice of Ofwat, having regard to guidance issued in May 2015[14]).

In the case of SESRO, the 'incumbent undertaker' is assumed to be TWUL, as the reservoir is located within TWUL's region. We have undertaken an initial assessment using a similar risk-based approach to that applied for the Thames Tideway Tunnel (TTT)[15] to compare the SESRO scheme's 'size or complexity' to that of TTT, the only scheme specified under SIPR to-date. The specification of TTT under SIPR considered four risks – 'scale risk', 'construction risk', 'management risk' and 'regulatory risk'. We address each of these aspects for SESRO below. In addition to this, we have also undertaken an assessment of whether delivering the scheme in-house could impact TWUL's financeability to the extent that it could endanger the ability of the company to deliver services for its customers.

- **Scale risk** –delivered in-house, SESRO's scale risk would be significant – its £2.3bn cost would amount to c.15% of RCV at the end of AMP7. It is, however, smaller than TTT which, at £4.2bn (in 2015 costs), was assessed as representing around 35% of TWUL's RCV at the end of 2015. The elements of TTT undertaken in-house (around £1.4bn of the mostly lower risk works) are broadly similar in scale to SESRO as a proportion of RCV. In terms of annual expenditure, allowing for a c.9-year construction timeframe with annual capex potentially peaking at around £300-400m, SESRO could potentially represent around 25% of the average net capex of £1.3bn p.a. during AMP7.

  In summary, while SESRO is clearly a significant project for TWUL, its scale risk is considered to be somewhat lower than TTT's. Further consideration of this is needed, including the concentration of risk in a single, very large project in the context of TWUL's broader financial situation.

- **Construction risk** – TTT's construction risk was assessed to be significantly higher than TWUL's 'normal construction works' and the previously delivered Lee Tunnel, due to the requirement to tunnel c.25km under central London, where the impact of any failure would be extraordinarily costly. In comparison, while SESRO is a large-scale scheme and does involve risk, construction risks are expected to be more manageable than TTT. The ability to assess ground conditions prior to construction reduces risk, and the impact of any issues is more likely to be limited to delay and abortive work, as opposed to the potential for catastrophic damage to significant third-party assets (as in TTT). Therefore, SESRO's construction risk is considered to be lower than that of TTT's.

- **Management and regulatory risk** – TTT was considered to entail significant management risk, as its size would require such management and governance capacity that it could potentially "*pose an increased risk to TWUL's ability to manage its business to a satisfactory standard*". Further, TTT's construction duration of more than one regulatory period was assessed to impose regulatory risk to TWUL, as "*unless adaptations to the regulatory regime were made, TWUL would need to commit to a substantial proportion of the investment without knowing what return it could expect."* SESRO is considered to be of sufficient scale as to require dedicated management and governance capacity within TWUL, and SESRO's c.9-year construction phase will span multiple regulatory periods. Therefore, the 'management risk' and 'regulatory risk' are broadly comparable to that of TTT.

- In addition, the 2015 guidance states that '*where the infrastructure project is being constructed for the benefit of customers of two or more water supply licensees … the likely complexity and the inherent risks associated with the interface between those customer and the undertakers'* will be considered a relevant factor in any specification. This did not impact TTT, but is relevant to SESRO, whose beneficiaries are TWUL, Affinity Water and Southern Water (the latter having a direct interface). Further work is recommended in this area, as the commercial structure is developed.

TWUL financeability

Based on our discussions with TWUL, the company's view is that in-house delivery of SESRO is not without challenges (including a requirement for additional equity to maintain gearing) but potentially financeable, assuming RCV growth.[16] This would be subject to appropriate diligence of the proposed RCV / revenue compensation, and analysis of the impact on covenant headroom and credit ratings.

To cross check the views provided to us by TWUL, we have considered what the impact of adding the project's capex to both net debt (assuming the project was 100% debt financed) and to RCV (assuming the project would be added

[14] https://www.ofwat.gov.uk/wp-content/uploads/2015/10/gud_pro201407infrastructure.pdf

[15] As set out in the *Thames Tideway Tunnel project specification reasons notice*, part of the *Thames Tideway Tunnel: project specification and preparatory work notices*, Department for Environment, Food & Rural Affairs, June 2014 Thames Tideway Tunnel: project specification and preparatory work notices - GOV.UK (www.gov.uk)

[16] Thames Water expressed concerns about the cumulative impact of financing this scheme under a DPC model in combination with SROs that are not detailed in this report (for example, the Thames to Affinity Transfer; the Thames to Southern Transfer, and London Reuse).

to the RCV) on TWUL's gearing. This analysis[17] supports the view that delivering the scheme in-house is unlikely on its own to represent an unmanageable impact to TWUL's financeability. The actual impact on TWUL's financial position will be confirmed as cost estimates and corresponding financing, commercial and contractual structures for SESRO are further developed at Gate 3 and beyond (as set out in Section 8), including taking into account recent developments in the sector and inflation.

SIPR 'size or complexity' test summary

In summary, while SESRO is a large scale scheme with a significant concentration of risk, its scale and construction risks are considered smaller relative to the Thames Tideway Tunnel. However, there are additional risk factors (including multiple licensees) present for SESRO. Therefore, while we cannot be confident at this stage that SESRO would satisfy the 'size or complexity' criteria under current SIPR legislation, a view would need to be taken in the context of TWUL's financial position at the time.

We note that Ofwat has made a recommendation[18] to the Secretary of State for Business, Energy and Industrial Strategy (BEIS) that the 'size or complexity' test be removed from SIPR legislation, in order that SIPR can be applied to a broader range of schemes where a licensed approach would offer better value for money. This approach, while not requiring the 'size or complexity' test to be met, would entail exposure to other risks, including the potential for significant delay if legislation is not brought forward as recommended.

Therefore, for SESRO we recommend keeping options open, with further work to understand the financeability implications of SESRO for TWUL in the context of TWUL's financial position, and engagement with Ofwat (and Government as appropriate), to understand the likelihood and risks of SIPR applicability being extended through legislation, and consistency with the proposed timing for Ofwat's Control Point C (currently planned for mid-2024) by which point a final decision on procurement approach is required.

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4.3 Implementation timescales

To assess whether there are any challenges with implementing DPC or SIPR within the timescales required, we have compared the current WRSE plan requirement to commence detailed design for SESRO in 2029 with the estimated time required to establish each procurement model.

Given that the estimated time required to establish a DPC model is a minimum of approximately three years from Gate 3 (early 2024 for SESRO), there appears to be sufficient time to accommodate establishing a DPC without causing unacceptable programme risk.

To be confident that there is sufficient time to procure and establish an IP under a SIPR model would require further work to understand the timing of legislative changes (to amend the SIPR regime) and how that would align with the Gated procurement process. At this stage, it is difficult to predict how long it may take for changes to legislation to occur. We note that the process to implement the SIPR model for TTT took approximately five years; however a significant driver of this duration was the need to secure the government support package, which is not anticipated to be required for SESRO. In summary, this indicates that at this stage there should be sufficient time to implement a SIPR model before contract award in 2029, without causing unacceptable programme risk.

4.4 Value for Money

4.4.1 Assessing cost to customers

Ofwat's DPC guidance sets out that DPC value for money should be evaluated by comparison with in-house delivery as the counter-factual. SESRO is located in TWUL's region, therefore the most likely in-house delivery comparison would be for TWUL to deliver in-house. However, as the scheme is being jointly developed by both TWUL and Affinity Water, it could potentially be delivered by a joint venture between the two companies. The discussion below applies to either of these in-house delivery options.

Financing costs

Whether financing costs are higher or lower under DPC, SIPR or in-house will be an important factor in which delivery model delivers best value for money for customers. Financing costs encapsulates the returns to equity investors and

[17] Delivering the scheme in-house and financing it on TWUL's balance sheet (which had gearing of 80.6% in the TWUL Annual and Sustainability Report 2020/21) TWUL's actual gearing would increase close to 83%. Gearing at this level is toward the upper end of gearing of other water companies and not dissimilar to TWUL's historical gearing (TWUL had a similar gearing in RY20/21). As such, it does not seem unfinanceable. We also note that TWUL's Baa2 rating takes into account the covenant and security package as agreed by the company, with the terms and conditions of its financing arrangements allowing TWUL to increase its indebtedness (on the basis of net debt/ RCV) up to 85% before distribution lock-ups come into effect. Failure to maintain a level of adjusted interest cover of at least 1.1x in any single year (or 1.2x on a three-year rolling average) would also trigger the dividend lock-up mechanism (Moody's Credit Opinion, TWUL, 2020/21). That the gearing would stay below the dividend lock up level also implies that the gearing level would not be unfinanceable. Further, in practice, all the debt associated with SESRO would not be raised up front and nor would all the capex be incurred in a single year; rather, debt would be raised gradually over time as the construction proceeded. This would enable TWUL to finance the capex partly through equity which may need to be raised. This would increase the likelihood that gearing levels and credit metrics in line with historical levels would be sustained.

[18] Competition stocktake report final (ofwat.gov.uk)

the interest and principal repayments to debt investors. It also includes transaction costs (including bid costs) and various other costs such as liquidity costs and the cost of carry.

The costs of debt and equity depend on the risk of the project, which may be higher or lower depending on the delivery route, and on the way in which the project is financed e.g., the gearing, the type and tenor of debt financing the returns required by equity investors (which may differ depending on the risk profile of the investment). It is outside our scope of work to undertake a detailed assessment of these costs for Gate 2. Instead, simplified assumptions have been made for the purposes of this work – these are shown in Table 6 below. We have also undertaken high-level modelling of the financing costs under different models, as shown in Figure 4. Financing costs are discussed further alongside modelling outputs at the end of this section, however in summary, further work on financing costs is required for Gate 3 but based on this preliminary analysis for Gate 2 it appears likely that financing costs would be higher under DPC than under an in-house delivery model.

Potential finance lease liability

We also note that the DPC arrangements could give rise to a finance lease liability on TWUL's and Affinity Water's respective balance sheets (via IFRS 16[19]). In particular, the finance lease liability could be recognised on company's balance sheet once the related asset has been commissioned. This would represent an unsecured liability and impact gearing and interest cover ratios[20]. However, all this will be driven by commercial arrangements, and the impact cannot be concluded upon at this time. Further detailed accounting analysis (i.e., interpretation and opinion from auditor of IFRS 16 condition) will be required in due course to clarify these presumptions.

Efficiency improvements

Scheme specific capex and opex efficiency could enable the DPC model to deliver a lower cost to customers compared to in-house delivery. The capex and opex (fixed and variable opex) for this scheme is shown in Table 5.

Table 5: Project cost estimates for the SESRO scheme

Scheme	Capital expenditure	Fixed Opex (per annum)	Variable Opex (per annum)
SESRO	£2,308m	£4.1m	£1.0m

Ofwat's DPC guidance indicates that water companies should assume efficiency savings of 10-15% on both capex and opex compared to an in-house delivery model, with innovation a significant contributor to achieving this greater level of efficiency. However, these assumptions need to be tested and evaluated in the context of the specific scheme under consideration.

In present value terms over 25 years (a typical CAP period), capex will account for almost 95% of the totex for this scheme, so the potential to achieve capex efficiencies will be a key determinant of whether DPC will deliver better value for money for consumers.

To test the potential construction savings through DPC we have examined different categories of capex individually.

We note that for this scheme capex is made up of approximately 95% civils construction (excavation, material import, enabling infrastructure for construction, interconnecting pipelines and canal spillway) and 5% mechanical, electrical, instrumentation, control, and automation (MEICA) works (pumping plant, and associated ancillaries). Furthermore, the civils construction costs include the costs associated with security of the land necessary for this scheme.

With respect to the capex for civils construction work, based on the water company(ies) securing the land for SESRO there would be little to no opportunity for a CAP or IP to realise efficiency savings on the 12% (c.£250m) of cost associated with land acquisition. As such, to achieve savings of 10-15% on the scheme overall, the CAP or IP would need to deliver in excess of 10-15% on the remaining 88% of cost they are able to influence.

Mechanical excavation of the reservoir is a mature construction technique deliverable through a large and established supply chain. Given that the technique for excavation and construction of the reservoir is established, opportunity for efficiency would come from areas such as increased productivity. From our discussions with the Programme Management team as part of this report we are aware that there would likely be restrictions on hours of construction activity due to the close proximity to residential housing, which may limit the opportunity for productivity efficiencies.

For the other civil construction works, TWUL and Affinity Water both have extensive experience of procuring pipeline and other civil structures construction activity within their capital programme. Consequently, it may be more difficult for a CAP or IP to achieve significant additional efficiency savings in these areas above that already achievable by water companies, compared to other aspects of the capex work.

Although capex for MEICA work is small compared to civils construction, we have considered this and concluded that the majority of MEICA work associated with the pumping plant is likely to be procured through a package offering

[19] https://www.ifrs.org/issued-standards/list-of-standards/ifrs-16-leases/

[20] Both TWUL's and Affinity Water's gearing ratios would deteriorate through net debt increasing while RCV denominator remains the same, and for the Adjusted Interest Cover ratio the negative impact will be channelled through an increase in debt interest payable, the denominator, without any offsetting increase in the numerator as neither water companies' revenues would increase as a result of recognising the finance lease.

by a specialist Original Equipment Manufacturer (OEM). This type of plant is typically pre-designed with existing manufacturing in place. The opportunity for efficiency would centre on how the plant is integrated as part of the overall design. Given the conditions of planning, the locations and arrangement of this are likely to be defined at the point a CAP or IP commencing detailed design and as a result the opportunity to deliver significant efficiency associated with the MEICA plant will be limited.

Overall, 10-15% capex efficiency on the overall scheme appears to be an ambitious target.

The opex proportion of totex for this scheme is very small, and predominantly relates to power costs (24%) and maintenance (46%).

The CAP would need to procure power from electricity markets, just as a water company would if it developed the project in-house. The opportunities for the CAP to procure electricity more cheaply than a water company would only arise through innovative procurement or hedging practices, as the power price is determined by exogenous factors outside of the control of either the water company or the CAP. TWUL and Affinity Water routinely procure electricity from the market and are experienced at doing so, whilst Ofwat has benchmarked electricity costs as part of its efficiency assessments at PR19 and prior price reviews, so it is not immediately obvious that the CAP would be able to identify a new way of procuring electricity compared to either water company. The hedging strategy may be one opportunity for the CAP to achieve savings compared to Thames/Affinity Water, but this would result in a trade-off of either higher or lower risk exposure, with the ultimate impact on VfM for customers depending on whether power prices increased or decreased more than expected.

Regarding Maintenance costs, while these are a greater proportion of total opex it remains a small proportion of totex. There may be some opportunity to drive efficiency here through changes to operating practices and lower rates, however it would have a very small impact on VfM.

Overall, 10-15% opex efficiency appears to be an ambitious target, and even then, with opex such a small component of totex, it would have a small contribution to any improved VfM calculation.

In summary, while there are opportunities for a CAP or IP to drive capex and opex efficiencies relative to an in-house delivery model, it is unclear if the CAP or IP could achieve 10-15% capex and opex efficiency savings set out in Ofwat guidance or not. Based on the above, we recommend talking to prospective DPC / SIPR bidders between Gates 2 and 3 to understand the key opportunities. Involving contracting organisations in those discussions, especially contractors specific to the reservoir construction activities, would help to get the detailed level of information required to carry out VfM modelling for DPC.

Construction risk

There are specific construction risks associated with the SESRO scheme that we expect will increase the cost of a DPC or SIPR model, thereby challenging VfM. In particular, there are challenges relating to:

- Dependencies associated with the construction and operation of the connecting rail head to enable delivery of materials essential to progress on site and the avoidance of delay e.g. if competing freight movements disrupted scheduling
- The construction period is lengthy at 10 years. A CAP would be exposed to inflationary pressures over this period unless protected under the contract. Note that we assume an IP with similar price reviews to a water company would have similar inflationary protection as for in-house delivery
- Objections to the reservoir, which may result in local action leading to delays on site and a negative reputational impact for TWUL
- Weather impacts that prevent progress on site
- Compliance with biodiversity net gain (hedgerows, water course diversions) that expand the scope of work or lead to delays if unforeseen environmental requirements are discovered
- Future changes in the requirements of the construction plant relating to environmental and/or decarbonisation considerations e.g. if diesel plant needed to be replaced with an electric powered plant.

While these construction risks would be broadly similar for in-house, CAP or SIPR delivery it should be noted that project risk may be able to be better managed at a portfolio level by the water company through in-house delivery. SESRO would be part of a programme of work across multiple AMP Periods. As an example, TWUL's capital programme over the 10 year construction period is estimated at c.£13bn and with SESRO would be over £15bn. The construction risks for SESRO could therefore sit within a portfolio of construction risks across a £15bn programme, whereas with a CAP or IP the risk needs to sit with the SESRO scheme alone. This exposes the CAP or IP to a greater chance of cost shocks associated with SESRO risks materialising.

It is also worth noting the following uncertainties around construction:

- The site for the SESRO reservoir is currently occupied by a solar farm. This would require removal and compensation, and any inclusion of new solar (bankside or floating solar) may impact the construction programme.
- Raw water take-off from the reservoir to the boundary of a potential future Water Treatment Works supplying Southern Water (is part of the Thames to Southern SRO scheme). This raw water take-off scope may be

added to the construction programme depending on how that Thames to Southern SRO scheme progresses. Constructing this raw water take-off early will avoid future disruption of the area around the reservoir including the bunded banks and landscaping, however without certainty of the project doping ahead costs may become abortive and would require funding outside of the SESRO SRO until they could be attributed to the Thames to Southern SRO scheme.

Our analysis suggests that the SESRO project has some significant construction delay risks that the CAP may have a limited ability to mitigate under a DPC model. Under a SIPR model these risks would remain, but their impact would be reduced because the IP would be able to recoup revenue during construction. Notwithstanding, the understanding of these construction risks will materially impact construction costs and also the degree to which risk costs are built into finance costs under DPC or SIPR. We recommend that as part of the engagement with prospective DPC or SIPR bidders, contracting organisations are engaged in detail between Gates 2 and 3 to understand how these risks would be managed to enable that to be included in the detailed VfM analysis.

Overall assessment of cost to customers

The overall assessment of whether DPC and SIPR would deliver improved cost to customers depends on the combination of financing costs, capex and opex under the DPC, SIPR and in-house delivery models. To combine these elements, we have undertaken some high level financial modelling of the NPV of the cost to customers of the scheme under the different delivery models. Some of the key assumptions used include:

- Using simplistic discounted cash flow analysis for DPC delivery route;
- Using RAB based models for SIPR & in-house delivery; and
- Using an 80-year recovery period post-construction.

Table 6 below details the key modelling input assumptions used in the cost to customers assessment, showing the relative ranges of cost to customers for the in-house, DPC and SIPR models.

Table 6: Detailed modelling parameters

				Values used for modelling		
Parameter	**Low Case**	**High Case**	**Sources**	**DPC Range**	**SIPR Range**	**In-house Range**
Weighted Avg. Cost of Capital (CPI-H deflated, standard form)	2.5%	3.8%	Bottom range is based on the TTT project. Upper range on OFTOs 2017/18 WACC. [21]	2.5% to 3.8% Based on TTT WACC/STPR 76-125 years rate to OFTOs 17/18 WACC.	2.5% to 3% Based on TTT WACC and Ofwat's PR19 WACC.	2.5% to 3% Based on TTT WACC and Ofwat's PR19 WACC.
Transaction Costs*	0.10% (incl. in reg. WACC)	5% capital spend, additional bidder & transaction costs.	Bottom range is part of Ofwat's WACC. Upper range is sum of Ofwat's bidder and procurement costs within Table A.	2% to 5% of capex	2% to 5% of capex	0.1% (incl in WACC) to 1% of total capital spend (assumed by PA)
Capex Efficiency Savings *(Sensitivity)*	-10%	-15%	-10 to -15% saving based on Ofwat's Vfm DPC guidance.	-10% to -15%	-10% to -15%	0%
Opex Efficiency Savings *(Sensitivity)*	-10%	-15%	-10 to -15% saving based on Ofwat's Vfm DPC guidance.[22]	-10% to -15%	-10% to -15%	0%
Modelling Mechanics	• DPC contract duration is assumed to be 20 years post-construction after which it enters Thames' RCV. • SIPR and in-house models assume recovery starts when assets begin to be constructed, with an 80-year recovery period post-construction • Under all models assets are assumed to fully depreciate by end of the recovery period.					

The results of the modelling are shown in Figure 4 below. The modelling compares the annuitized cost of the SESRO scheme under each delivery model. It should be noted that for each model there are three bars, which are an accumulation of the costs to customer (expressed in annuitized terms) layering in the key variables one by one:

- The light blue bar reflects the weighted average cost of capital (WACC) impact only;
- The green bar is the light blue bar with the addition of transaction costs; and
- The dark blue bar is the green bar with the addition of opex and capex efficiency savings.

[21] PA's calculation based on CEPA's Evaluation of OFTO Tender Round 2 and 3 benefits. Source: Table 4.1 of '*Review of cost of capital ranges for new assets for Ofgem's Networks Division*', Ofgem, 2018 (cepareport_newassets_23jan2018.pdf (ofgem.gov.uk)) (values adjusted for inflation (CPI-H) and to exclude tax).

[22] See for example Table A published by Ofwat for detailed assumptions.

To indicate scale, the vertical arrow shows that the highest value of the indicative annualised cost to consumers for DPC is 6% greater than the highest value for in-house delivery.

Modelling outputs indicate that the DPC model could offer the lowest cost to customers if a WACC of 2.5% and capex/opex efficiencies of approaching 15% can be achieved. Further, comparing the light blue bars shows that even if DPC achieves the same WACC as in-house delivery or SIPR (and does not achieve any capex/opex savings), the overall cost to customers could be lower under DPC. This is due to the fact that the modelling assumes that after the first DPC period (20 years) the remaining asset value transfers to TWUL's RCV and is then treated similar to an in-house model. To ensure a like-for-like comparison, we have assumed that under all models the asset value fully depreciates to zero over the 80-year recovery period. Therefore, under DPC as modelled, there is only a 60-year period over which RCV return is earned on the asset value, while under in-house delivery and SIPR, there is a full 80-year period. At the low-end of the WACC range for DPC, this results in an overall lower cost to customers than either in-house or SIPR.

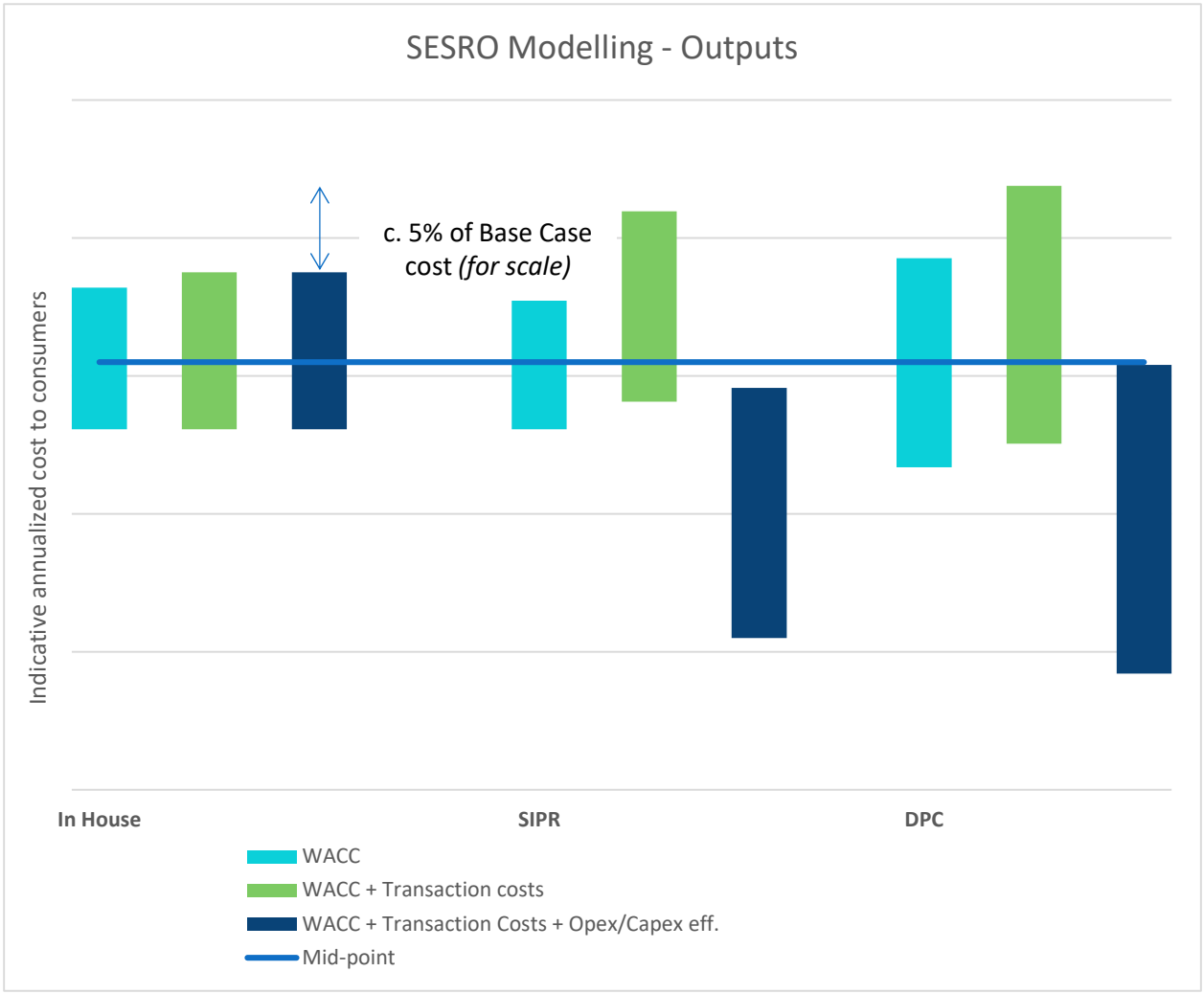
On the other hand, the range of potential costs to customers under DPC is much wider than for in-house or SIPR models. This is a result of the different gearing ratios assumed for the upper and lower DPC WACC values – as discussed in the '*Financing Costs*' section above. For DPC procurement, we have assumed a range of 2.5 - 3.8% WACC (Vanilla, CPI-H deflated) based on a range of evidence available.[23] This includes a modest gearing range of c. 40% (for the low WACC scenario) to c.60% (in the high WACC scenario). Our DPC modelling approach also assumes that equity investors will achieve Internal Rate of Return (IRR), therefore project IRR being equal to cost of equity. Holding all else constant, we note that increasing the gearing level would result in a lower WACC. This in turn would improve the VfM outcome for customers:

- Considering the difference between potential delivery models, we note that increasing the gearing level from c. 60% to 80% would result in the marginally improved outcome for the DPC route relative to in house delivery that is currently depicted in Figure 4.
- Our modelling indicates that opex and capex efficiencies savings in accordance with PR19 assumptions (c.10-15% savings) would have an approximately equivalent effect on the indicative cost to consumers as a lower WACC, thus implying that both areas are of similar importance in driving a greater VfM.

However, it is unlikely that increasing the gearing ratio while holding all else constant is realistic – increased gearing is likely to increase the cost of debt, which would therefore counteract some of the potential cost reductions brought about by higher gearing.

[23] For example, see Thames Tideway Tunnel WACC decision; Offshore Transmission Operators 2017/18 WACC

Figure 4: SESRO – High Level Modelling Outputs



In summary, our early modelling suggests that DPC may offer slightly lower cost to customers than SIPR, however these results are dependent to a significant degree on the input assumptions (for example gearing, achievable WACC and recovery period). Further, more detailed exploration of potential DPC and SIPR model parameters such as gearing, cost of debt and equity and achievability of capex and opex efficiencies is recommended for Gate 3 (as set out in Section 4.5 below). This should be undertaken through market engagement to ensure that parameters are based on realistic, up-to-date information, and supported by comprehensive financial modelling to determine the overall cost to customers under DPC and SIPR.

4.4.2 Assessing water resilience/resource value

This scheme creates a resilience asset that helps ensure that water deficits are not experienced in a drought situation by abstracting from the River Thames when flows are high, and returning water to Thames when the river flows are lower and would otherwise compromise downstream abstraction. This determines the core 'water resource value' delivered to customers from this scheme (which currently excludes the connection for Southern Water's SRO transfer).

Opportunities around future flexibility of this reservoir's capacity and operating regime are minor as the capacity is defined at the point of construction (150Mm^3), and the ability to abstract from the River Thames will have limitations that are felt by any operator.

However, there may be a requirement to change the operating regime of the reservoir at a later date (if for example Southern Water's connection was made and if that draw on the reservoir increased over time) or carry out secondary construction activity to alter top water levels. While changes of this nature could be managed through the contracting arrangements put in place, there would be more flexibility for the water company if these assets were under its direct control.

If SESRO was delivered through an in-house model, then TWUL (as the incumbent undertaker delivering the scheme) would have the flexibility to modify the reservoir or its operations as part of its wider system of water resources. Through the five-yearly price control process, TWUL would be able to apply to Ofwat for additional revenue to fund the cost of these modifications. However, it is unlikely that the same degree of flexibility would be available under a DPC contract. If this flexibility was required within the DPC contract period, this would likely require a change

to the CAP contract. Whilst contract changes are possible, they would come at a cost, thereby eroding value for money. Under SIPR, we anticipate that the IP licence regime could be designed in a way to incorporate this kind of flexibility, although whether this would enable a similar level of flexibility (or incentivise changes that would reduce overall customer bills) to the same degree as an in-house model.

At this stage it is not clear whether the need for future flexibility is a material consideration when assessing the potential value for money under DPC or SIPR vs. In-house delivery. Therefore it is difficult to value the benefit of the additional flexibility to customers, but qualitatively it reduces the case for DPC (and to a lesser degree SIPR) relative to an in-house delivery model. Further detailed modelling and scenario-analysis post-Gate 2 will help to understand the potential materiality of any future changes to the scheme, and therefore the value of future flexibility.

4.4.3 Assessing broader value

Regarding broader value, there is an opportunity for the SESRO scheme to incorporate flood defence through construction and operation of the new access road (which would be raised and act as a barrier). This has the potential to add significant value to the scheme beyond the original purpose, however from discussions with the Programme Management team we appreciate that taking responsibility for flood defence (linking closely to the Environment Agency) may be something that a CAP or IP finds less attractive. As such the opportunity to realise this benefit may be more possible through in-house delivery, however that would need to be tested with prospective CAP/IP bidders between Gates 2 and 3.

There are several precedents where reservoirs have incorporated leisure facilities for the public and natural habitats to encourage biodiversity. Water companies typically take these opportunities based on the reputational and potentially commercial benefits provided, and these could be 'designed into' a DPC or SIPR model where appropriate or required (for example to satisfy planning constraints). Therefore, it is unlikely that there would be a significant difference in the broader value delivered under different procurement models. Further, in comparison to the water resilience/resource value and overall cost to customers, the broader value delivered by the scheme is likely to be negligible and therefore not a material consideration for the choice of procurement model.

4.4.4 Summary assessment of value for money

Our analysis shows that for SESRO:

- SIPR and DPC appear similarly likely to achieve the lowest cost-to-customers, assuming that these models can deliver capex efficiencies and potentially lower costs of finance. Notwithstanding, it is likely that capex and opex efficiencies of around 10-15% will be needed for DPC or SIPR to achieve significantly lower costs to customers than in-house delivery.
- There are opportunities to adapt the 'standard form' DPC model (for example, introducing staged payments during construction or recovering costs over a longer period) to drive improved financing costs.
- SESRO comprises reasonably typical water industry work-types and assets, and relatively low opex as a proportion of totex. Therefore, achieving 10-15% capex and opex efficiencies under DPC or SIPR appears ambitious.
- There may be value-for-money benefits associated with retaining flexibility to adapt the scheme's future operating regime and capacity in response to changing needs. This would favour in-house delivery, and potentially SIPR, over DPC – however at this stage further analysis of the likelihood and impact of future change is required to validate the materiality of this flexibility.

We recommend further investigation of these findings, including detailed commercial risk analysis, market engagement with both potential investors and the construction supply chain, to inform more realistic parameters to include in detailed financial modelling of costs to customers under DPC, SIPR and in-house models required for Gate 3.

4.5 Procurement Model Assessment Conclusion

Table 7 overleaf summarises the assessment of the eligibility of the SESRO scheme for DPC and SIPR.

As set out in this report, there are no critical impediments to the application of DPC or SIPR for the SESRO scheme based on size, discreteness, or other commercial feasibility parameters. However, we have noted several challenges that will need to be overcome ahead of Gate 3. For example, in order for this scheme to achieve the capex efficiencies targeted in Ofwat's PR19 methodology (10-15%) specifically relating to civils construction costs, noting that the cost of acquiring land for SESRO is around 12% of the scheme cost and liable to be outside of a CAP's influence, any capex efficiency would need to be driven through the remaining 88% of the scheme. This would be considered an ambitious target for any future DPC provider.

Table 7: Summary of Gate 2 assessment for the SESRO scheme

		SESRO
DPC (Late model)	Size	The scheme significantly exceeds £100m totex
	Discreteness	There are no significant challenges to the discreetness test, with any identified challenges able to be mitigated through the contract.
	Implementation timescales	There are no significant challenges to developing and procuring a DPC model within the timescales
	Value for money	Our Gate 2 assessment indicates that DPC may deliver better overall value for money for customers than in-house delivery, but only under a 'best-case' combination of low finance costs and significant capex efficiencies. However, further investigation, including detailed commercial risk analysis for the scheme and discussions with potential bidders and specialist contractors are required ahead of Gate 3 to validate whether this is achievable.
SIPR	Size or complexity	SESRO is not considered large or complex enough to conclusively *threaten the incumbent undertaker's ability to provide services for its customers* (assuming TWUL delivers the scheme). However, Ofwat has made a recommendation[24] to the Secretary of State for Business, Energy and Industrial Strategy (BEIS) that the 'size or complexity' test be removed from SIPR legislation, so that SIPR can be applied to a broader range of schemes where a licensed approach would offer value for money. Our analysis indicates that SIPR would likely offer value for money for SESRO, and therefore we recommend adopting it as the preferred approach, subject to the necessary legislation coming forward and to further validation and market testing.
	Implementation timescales	There is expected to be sufficient time to implement a SIPR model without introducing unacceptable programme risk
	Value for money	Our Gate 2 assessment indicates that SIPR could deliver better overall value for money for customers than either DPC or in-house delivery, but further investigation of the costs and benefits of SIPR is required, as are any potential benefits that could be achieved through modifications to the standard DPC framework.

RAG rating definitions	
	Procurement model does not satisfy the criteria and should be dis-counted from consideration post-Gate 2.
	Procurement model satisfies the criteria based on information available at this stage, however there are some challenges to its viability that need further work to conclusively resolve.
	Procurement model satisfies the criteria.

Significant further work, including market engagement[25] to inform more realistic assumptions for the DPC and SIPR model structures and parameters needs to be undertaken. Moreover, more comprehensive financial modelling needs to be carried out for each potential scheme to provide a more robust assessment of the likely cost to customers under each procurement model.

This further work needs to specifically consider not only standard DPC and SIPR models, but versions of these tailored to SESRO to achieve best value for money. For example, for Gate 3 it may be appropriate to further explore possible adaptations to DPC to reflect the unique characteristics of SESRO such as:

- Introducing staged payments – rather than assuming a flat revenue profile, could bring revenue sooner and in pre-agreed lump sum amounts, therefore strengthening the overall case for the DPC delivery route. We are aware that Ofwat is considering introducing a version of this in the near future.

[24] Competition stocktake report final (ofwat.gov.uk)
[25] Market engagement may entail number of activities such as discussing technical aspects of the scheme with potential investors, discussing risk allocation and its impact to bankability, interaction with credit agencies amongst others.

- For SESRO, an 80-year recovery period was modelled. Recovering the costs over a longer period of time (consistent with the economic life of the assets) may improve the case for this scheme. However, this is likely to be somewhat offset by the additional transaction costs associated.

We also note that TWUL have also commissioned further advice on SIPR from Agilia Infrastructure Partners. This work has identified several key characteristics of SESRO (notably its size, the duration of construction, and its high capital gearing) that make it potentially well suited to a separate procurement of the construction supply chain and finance, under the existing regulatory framework. Some of the key points discussed in Agilia's report[26] to TWUL include:

- **Efficient Financing:** driving efficient financing cost will be a significant driver of customer value. The SIPR model may split procurement of the supply chain and the financing, potentially opening-up access to a wider pool of capital investors, and thereby helping to drive more competitive financial arrangement. What's more, the potential to have a 80-year SIPR contract in place may lead to IP raising debt with longer tenors thus driving cost of debt down relative to a shorter DPC contract.
- **Efficient Procurement**: Agilia considers that SIPR would offer more "*tools and greater flexibility*" to drive a successful outcome for consumers. For example, under SIPR the IP model allows the supply chain contracts to be developed to suit characteristics of the project, with the IP acting as a 'competent employer'.
- **Efficient Operating Activities**: given SESRO is a long-life asset with multiple potential regional beneficiaries and uncertain usage, there is scope for 'unknown unknowns' over the timeframe. SIPR could offer greater long-term flexibility to manage such scenarios.
- **Other potential benefits**: a licenced entity would offer Ofwat more flexibility to assess and modify SESRO's operations as required. This would make enforcement action easier in the event of licence breach, and would enable well understood methods of introducing new policy measures (e.g. system operations, 'fair share' arrangement, charging methodologies).

In summary, our assessment supports the Gate 1 conclusion, indicating that SESRO is potentially suitable for procurement under a competitive model. This could be either through DPC (reflecting the Gate 1 assessment that the scheme is suitable for Late/Very Late DPC), or SIPR (discontinued at Gate 1, but re-introduced for Gate 2 in response to our updated understanding of the potential to broaden SIPR legislation applicability). Further, the Gate 2 assessment indicates that SIPR may offer value for money benefits for SESRO, and therefore should be explored further.

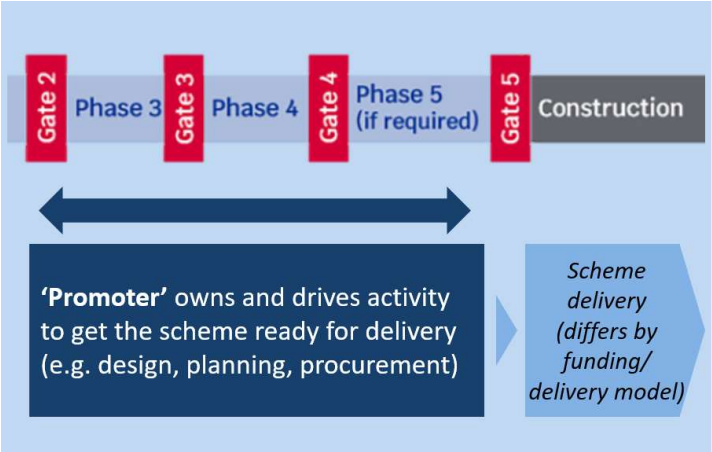
Further work (including market testing and modelling) is required to test value for money assumptions, as part of Gate 3 development. In particular, this will focus on engaging with the construction supply chain and investor landscape to better understand how key scheme risks are likely to be priced under SIPR and DPC, how a SIPR or DPC deal would be structured, and the opportunities that SIPR and/or DPC offer for driving greater SESRO-specific capex and opex efficiencies. This insight will be reflected through in-depth financial modelling to understand whether SIPR or DPC models are likely to drive lower costs to customers compared to in-house delivery routes.

[26] Consideration of the applicability of a SIPR delivery model for the South East Strategic Reservoir Option (SESRO), September 2022

5 Scheme 'promoter' options

The scheme 'promoter' will own and drive activity to prepare the scheme ready for delivery from Gate 2 to Gate 5, as shown in the diagram below. Promoter responsibilities span the following key areas: preliminary design and feasibility activity; stakeholder engagement and consultation; planning activity; and procurement.

Figure 5: Overview of promoter activity within the RAPID gated process



Scheme promotion covers several key activities, critical to the success of the future scheme. This includes preliminary design and feasibility assessments, planning activity, stakeholder engagement/consultation and procurement. Because of this, clear governance is needed between all involved parties to make robust decisions on critical elements such as the funding/delivery model, the commercial approach (including for ongoing technical support to wider development activity), negotiation of commercial issues during procurement, and mitigations for key planning, technical and construction risks.

The SESRO scheme places particularly critical responsibilities on the Promoter organisation throughout scheme development. The scheme has a high degree of attention from the local community and their political representatives, requiring a strong focus on stakeholder engagement to de-risk the planning process. Further, the strong reliance on rail transport for SESRO construction will require significant engagement and potentially commercial negotiation with Network Rail to mitigate delay risks during construction. Finally, the potential to apply the SIPR model will require close coordination and engagement with Ofwat, RAPID, Defra and potentially other stakeholders to support discussions relating to the broadening of SIPR legislation applicability.

In addition, under the RAPID gated process, pre-planning and planning applications need to be undertaken prior to Gate 3 and Gate 5. Therefore, should scheme promotion (and associated planning responsibilities) be transferred to a different organisation, this would need to be done within the next twelve months unless Gate 3 is to be delayed.

Current Promoter arrangements and water company involvement in SESRO

TWUL has been developing the SESRO scheme for several years, and played the role of sole Promoter up until the start of AMP7. As set out in the PR19 Final Determinations, for the AMP7 SRO gated development process, TWUL and Affinity Water are currently jointly developing the scheme, with TWUL playing a 'lead' role reflecting the 66:33 funding allocation between the two companies respectively. As a result, TWUL and Affinity Water have been operating a joint promotion role since 2020.

Southern Water are likely to become beneficiaries of the scheme in the future (c.2048[27]), as SESRO will be the source[28] for the Thames to Southern Transfer scheme. Southern Water are not currently directly involved in promotion or development of SESRO, but are kept informed through TWUL's broader SRO coordination activity.

Promoter options beyond Gate 2

Using the definitions set out in the RAPID / Ofwat December 2021 consultation document[29], an SRO scheme Promoter could be one of the following:

- the provider/exporting company
- company where the assets are located
- the importing/beneficiary company

[27] Based on the version of the WRSE Regional Plan current at the time of this report.
[28] This is the case if SESRO is constructed – if not, the Thames to Southern Transfer could be supplied by the Severn-Thames Transfer scheme (not part of this report).
[29] https://www.ofwat.gov.uk/wp-content/uploads/2021/12/RAPID-Autumn-2021-condoc.pdf

- a joint venture between the above
- a third party
- a hybrid option where one company leads with defined involvement from the others

Table 8: Promoter options mapping for SESRO below sets out the specific companies that hold these roles for the SESRO scheme.

Table 8: Promoter options mapping for SESRO

	TWUL	Affinity Water	Southern Water	Third-parties
Provider / exporting company	✓ *Source water extracted in TWUL area*			? *Could be IP if the SIPR model is used*
Company where the assets are located	✓ *Assets located in TWUL area*			
Importing / beneficiary company	***Primary*** *Water is returned from reservoir directly to the TWUL area*	***Primary*** *Enables more resilient downstream abstraction from River Thames to support Affinity transfers in 2040*	***Primary*** *Direct future connection from reservoir to Thames to Southern Transfer SRO scheme between 2040 and 2053*[30]	

This table shows that TWUL, as the provider/exporter, company where the assets are located, and the company with the largest customer base benefitting from the scheme, justifies a key role in scheme promotion.

Further, Affinity and Southern Water are both primary beneficiaries of the scheme, and so should also play a key role as project funders and sponsors, as described below.

Promoter management, delivery and governance considerations

Immediately post-Gate 2, the most pressing activities for the Promoter organisation will be to continue to drive forward the technical and commercial development of the scheme, for example down-selecting design options, agreeing and implementing mitigations for key risks and determining the optimal commercial delivery arrangements. A key decision that will need to be made is the most appropriate contractual counter-party for a CAP (DPC) or IP (SIPR). However, the DPC contract does not need to be put in-place until after Gate 5 – therefore the post-Gate 2 Promoter does not necessarily have to be the counter-party to the DPC contract.

For the post-Gate 2 phase, it is most critical to implement clear and efficient governance and decision-making through the promotion process, to maintain delivery efficiency while making decisions that deliver best value for money from the scheme in the long term. In addition, promotion will require significant investment in time, effort and management focus from the promoting organisation(s) and may require specific capabilities to be delivered or procured. Joint promotion will add complexity and likely associated cost and/or time to the promotion process – for example, joint governance processes, and time-consuming processes to reach consensus where there is disagreement. This could be mitigated by creating a formal joint venture, however this will also take time and cost to implement.

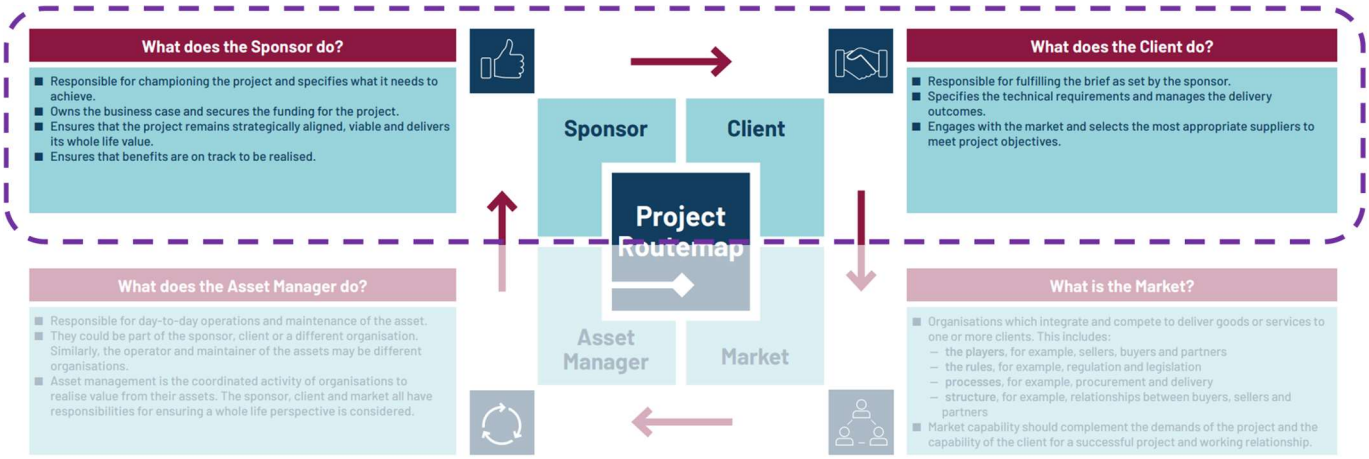
As a result, there are likely to be trade-offs between driving an efficient, timely process and ensuring that all parties are involved in every decision that may impact them or their customers. This needs to be mitigated through clear, binding and well-planned decision-making criteria between parties, and a well-designed operating model for the Promoter organisation.

HM Government best-practice, as set out in the Infrastructure and Project Authority's (IPA's) Project Routemap[31], sets out two key functions – 'Sponsor' and 'Client' – that need to be incorporated into the Promoter organisation, as shown in Figure *6*: Sponsor and Client roles within the Promoter organisation. Furthermore, IPA guidance indicates that to maintain focus and streamline governance and delivery:

[30] Dependent upon the adaptive plan scenario selected in the WRSE Regional Plan
[31] *Project Routemap: Setting projects up for success*, Infrastructure and Project Authority, Handbook - FINAL.pdf (publishing.service.gov.uk)

- ‘Sponsorship’ and ‘clienting’ functions should be distinct (even within the same organisation), and
- The client function should be delivered by a single team (which could be made up of individuals from different organisations).

Figure 6: Sponsor and Client roles within the Promoter organisation



Conclusion

In conclusion, we recommend that SESRO should continue to have joint involvement from all beneficiaries and prospective funders (TWUL, Affinity Water and Southern Water) post-Gate 2. The current proposed approach for SESRO post-Gate 2 is for TWUL, Affinity Water and Southern Water to jointly ‘sponsor’ the scheme, with TWUL undertaking the ‘client’ role and taking single point accountability for promotion and delivery of SESRO under the preferred procurement model.

We recommend that the parties work together as priority to develop legal and commercial structures for this arrangement including agreeing clear responsibilities and accountabilities between the organisations to streamline governance, decision-making and delivery. This should reflect IPA best practice for ‘sponsorship’ and ‘clienting’ as set out above.

6 Risk allocation

This section sets out the current early thoughts on potential risk allocation between the 'sponsors', the CAP/IP and customer for the SESRO scheme, based on delivery under either a DPC or SIPR model. Figure 9 of Ofwat's *Direct Procurement for Customers: Technical Review* report (reproduced in Figure 7 overleaf for reference) sets out indicative risk allocations for a typical project under the DPC model. Because DPC and SIPR both involve the delivery of assets on a water company's behalf on a design-build-finance-operate-maintain (DBFOM) basis, we have used Ofwat's indicative DPC risk allocations as a starting point for discussion of a SIPR model for SESRO (i.e. where Ofwat's DPC risk allocation table states that a risk is transferred to the CAP, we assume this would be transferred to the IP under SIPR).

With the exception of the significant reliance on bringing materials by rail, and the relatively high-profile nature and risk of local public and political opposition to the scheme, the construction risk profile for SESRO is relatively typical for a water industry project. As such we expect risk allocation to reflect that set out in Figure 9 of the Ofwat report, which includes risk sharing between the CAP/IP and customers during the 'Delivery' and 'Operations' phases. This risk sharing should be limited to unforeseen costs or delays outside the CAP/IP's control (where risks are able to be fully controlled and managed by the CAP/IP, these risks should be transferred to them and not shared with customers).

Under DPC, risk sharing could be enacted through allowing the CAP to recoup efficient additional costs through the future DPC revenue stream, while under SIPR it could be enacted through the regular price control process whereby Ofwat could allow the IP to recoup associated efficient costs through customer bills.

Examples of unforeseen delays would include those driven by the two 'non-typical' risks outlined above:

- Reliance on materials by rail: this includes the construction of new rail infrastructure, which may need to be constructed and/or commissioned by Network Rail, and would entail significant dependency on the availability of adequate rail freight capacity on the existing rail network (known as 'freight paths') at the right times throughout the reservoir construction phase. Should rail infrastructure construction or commissioning be delayed, or freight paths not be available as planned (for example due to disruption on the network), this could lead to delays outside the control of the CAP/IP. Future contractual arrangements should aim to transfer this risk to Network Rail, however the degree to which this is possible requires further investigation.
- Local public and political opposition to the scheme: while much of this risk will be mitigated through the planning process that will set conditions under which construction can proceed, there will remain a risk of local opposition to the scheme that could lead to delays. While this can be mitigated by the CAP/IP, for example through comprehensive stakeholder engagement, it is unlikely to be completely removed.

As the residual risk (after mitigation) associated with the two risks outlined above would be outside the control of the CAP/IP, this should be shared or transferred to customers as appropriate, to avoid the CAP/IP including excessive risk-costs into their price.

As the project develops and specific risks and costs become clearer towards Gate 3 and beyond, we recommend a more granular approach to the transfer of specific risks, following the principle, set out in the HM Treasury Green Book and reflected in the IPA Project Routemap, that '*responsibility for management of risk should be allocated to the organisation best placed to manage it*'.

Figure 9: Potential risk allocation under the DPC model

Key Risks in Project Life Cycle	Stakeholder			Comments
	Appointee	CAP	Consumer	
1. Solution Development				
Data	✓		✓	— Allocation of early design and solution development risks likely to be similar under DPC to existing models. Especially for later tender models. — Early tender model may allow some greater sharing of risk with CAP.
Uncertainty	✓		✓	
Constraints	✓	✓	✓	
2. Planning				
Land purchase and site risk	✓		✓	
Environmental and social risk			✓	
Planning / Consent permission	✓		✓	
Third Party Consideration	✓	✓	✓	
3. Design				
Design process		✓	✓	— Allocation of design risks likely to be similar under DPC to existing models. Especially for later tender models. — Early tender model may allow some greater sharing of risk with CAP.
Design for construction	✓		✓	
Design for maintenance	✓		✓	
Resource availability and expertise	✓	✓		
Change in design required due to external influences	✓	✓	✓	
Materials and plant		✓		
4. Delivery				
Time and cost overrun risk		✓	✓	— Allocation of construction or delivery risks to the CAP from the appointed company is anticipated under the DPC model but assumed to generally be a direct transfer.
Resource availability of contractors		✓	✓	
Unforeseen ground or existing building conditions		✓	✓	
Third party claims		✓	✓	— Some opportunity for risk transfer from customers may be possible in the competitive tender process albeit that this is likely to be priced in the bid. — We assume that some re-openers to CAP revenue continue for material changes that are outside of management control (see section 4).
Subcontractor default / bankruptcy		✓		
Poor project management		✓		
Commissioning overruns		✓		
Availability of facilities	✓	✓	✓	
Legislative / regulatory change	✓		✓	
5. Operation				
Service performance risk	✓	✓	✓	— Allocation of operational risks to the CAP from the appointed company is anticipated under the DPC model but some service related risks may be difficult to transfer where they relate to statutory obligations. — Some opportunity for risk transfer from customers may be possible in the competitive tender process albeit that this is likely to be priced in the bid. — We assume that some re-openers to CAP revenue continue for material changes that are outside of management control (see section 4).
Resource or input risk		✓	✓	
Demand risk		✓	✓	
Maintenance risk		✓	✓	
External and third party impact		✓		
6. Transfer				
Asset condition and performance at handback	✓	✓		— Introduction of DPC model creates new asset transfer and hand-back risk which we assume is shared across appointed company and CAP. DPC contract would need to include requirements for asset transfer and hand-back.
7. Tender model specific risks				
Procurement failure	✓		✓	— Assume procurement risk is faced by both companies and customers where this results in delays or cost increases.

Figure 7 Indicative allocation of technical risks under DPC delivery models (reproduced from Figure 9 of* Direct Procurement for Customers: Technical Review*, KPMG, 2017)

7 Operating and commercial arrangements

As a nationally important asset, critical to the water supply balance across the south east, it is essential to get the operating and commercial arrangements for SESRO right. This section sets out options, considerations and early indicative principles for those commercial arrangements and operating principles

7.1 Context

SESRO is a highly capital-intensive scheme, even when considered over the full asset life-cycle (circa 100 years), capex is anticipated to be around five times larger than total opex (not considering finance costs). This means that the majority of funding goes towards covering the initial capital cost of the scheme (as well as ongoing costs of financing the initial capital) rather than opex. Once constructed, filled and commissioned, SESRO will be a relatively passive asset. In simple terms, it will fill and discharge throughout the year based on river and reservoir levels, and its operation could effectively be 'automated' based on combinations of these parameters.

To give an idea of the order-of-magnitude impact of SESRO costs on Affinity Water, TWUL and Southern Water customers' bills, we have undertaken a rough calculation using the Thames Tideway Tunnel (TTT) as a precedent. TTT is expected to add £20-£25[32] to the average annual water bill of TWUL customers. Given that SESRO cost is around half of TTT and will be shared with a 30% larger population base[33], the potential bill impact could be £7-£10 (in 20/21 base). Assuming a water bill of c.£370/year[34], this suggests SESRO would make up around 2%-3% of Affinity Water, TWUL and Southern Water customer bills. This is an indicative estimate provided for context only, and should not be taken as an indication of the potential bill impact. The actual bill impact will depend on a range of factors, including the details of the commercial and financing arrangements put in place. However, this rough estimate contextualises the size of the bill impact under consideration.

7.1.1 Aiming for a collaborative, rather than transactional, approach

As noted above, SESRO will be a strategic, multi-party scheme that is critical to the water supply balance for a large number of water customers across the south east. Further, as a resilience scheme, SESRO will be of most crucial importance when water resources across the region are under stress. Because of this, it is important to foster a collaborative (as opposed to transactional) approach when developing the operating and commercial arrangements for SESRO. In practice this is likely to require flexibility on behalf of all parties to aim for the best outcomes across the whole customer base, particularly when unexpected situations arise.

7.1.2 SESRO as part of a regional water resource system

SESRO has been designed and will be operated as part of a larger system of water resources across the south east, including assets operated by all water companies in the region. We understand that the modelling that determines the need and design of SESRO is based on the overall best-value, least-regrets 'system' required to meet regional water needs, and therefore SESRO's design and operation has interdependencies with a range of assets that it has no direct physical or operational connection to. Because of this, there may be benefit in considering operating and commercial arrangements at a 'system-level' (for example where all regional customers pay for access to the entire system), rather than solely on a scheme-by-scheme basis. Note that this does not mean that SESRO operations are not discrete and separable enough to be operated by a third-party (for example under SIPR or DPC), as the operational interdependencies should be able to be codified in a way that enables them to be written into a contract. However, the 'overall best-value' system may lead to some customers being required to use relatively expensive sources so that other customers can use relatively cheap ones – meaning that there may be benefits in trying to balance costs out across the whole system.

Notwithstanding, the main focus of this report is on SESRO as an individual scheme, and therefore we do not consider the wider system perspective in any further detail.

7.2 Operating arrangements

As set out above, SESRO is a relatively passive asset, and its operations could be codified and automated based on a set of externally-driven parameters. Put simply, when reservoir levels are below a pre-determined threshold and river levels are above a pre-determined threshold, the reservoir will fill; and when reservoir levels are above a pre-determined threshold and river levels are below a pre-determined threshold, the reservoir will discharge into

[32] https://www.ofwat.gov.uk/pn-11-22-thames-tideway-licence-amended-to-protect-costs-of-the-project-after-covid-19/

[33] TWUL and Affinity Water together have c.15m customers (Affinity Water is a water-only company, and all Affinity Water customers are TWUL wastewater customers). Those c.15m customers are the same for TTT and SESRO. SESRO will also benefit Southern customers, who are roughly 4.6m.
Sources: [1] Size of population served by TWUL: <https://www.thameswater.co.uk/about-us/who-we-are#:~:text=Every%20day%2C%20we%20serve%2015,London%20and%20the%20Thames%20Valley>;
[2] Size of population served by Southern Water: <https://www.southernwater.co.uk/media/default/PDFs/annual_report_summary_a4.pdf>

[34] In 20/21 base, calculated as an average Thames Water 2024/25 bill of £361 (in 17/18 base) and Southern Water 2024/25 bill of £343 (17/18 base), sourced from Thames Water and Southern Water's PR19 Final Determination documents. Affinity Water is a water only company, and therefore Affinity Water bills are not representative of their customers' entire bill (which will also include a sewerage charge from the local water and sewerage company), so have not been included in this indicative calculation.

the River Thames[35]. This will provide additional water that can be abstracted downstream at TWUL's existing river abstraction points, which includes the Lower Thames Reservoir system. The Thames-to-Affinity Transfer (T2AT) will enable Affinity Water to abstract water from the Lower Thames Reservoir system – i.e. while Affinity Water customers benefit from the raw water provided by SESRO, they will not have a direct connection to SESRO itself.

When the Thames-to-Southern Transfer (T2ST) scheme is constructed[36], this will connect directly to SESRO. T2ST will continuously take water from SESRO, usually a relatively low 'sweetening' flow, which will increase when required by Southern Water (during dry periods). Figure 8 below shows a simplified schematic diagram of the SESRO scheme and its connections to the River Thames, Affinity Water and Southern Water.

Notwithstanding the above, it is feasible that SESRO (in combination with T2AT and T2ST, and any new potential regional transfers) could be more actively managed to provide greater flexibility to manage the overall water supply system in the south east. This could provide the opportunity to transfer more water to Southern Water, Affinity Water or new groups of customers.

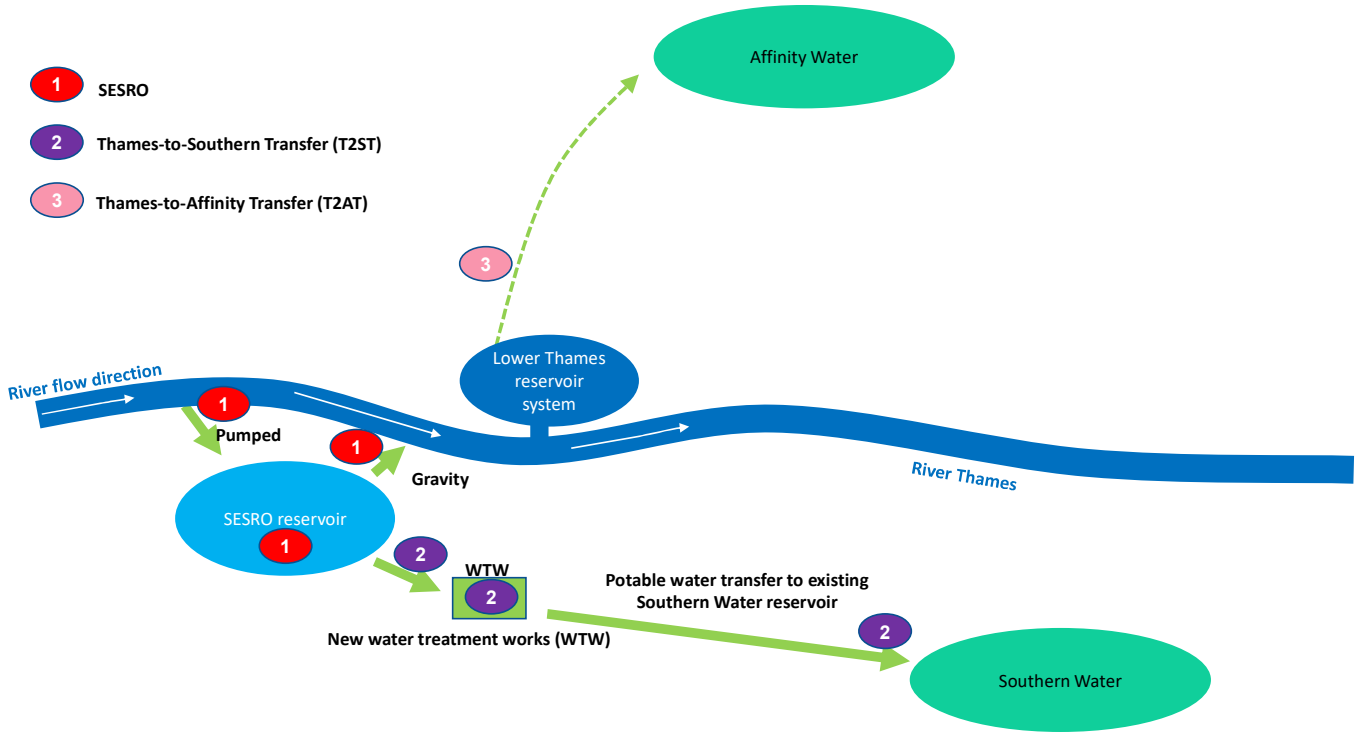


Figure 8 Simplified diagram showing the SESRO scheme, and connections to the River Thames, Affinity Water and Southern Water

7.2.1 Resilience vs. regular use

The main driver behind SESRO's development is to provide drought resilience for the south east region. The reservoir will be sized to provide sufficient capacity to supply TWUL, Southern Water and Affinity Water up to a 1 in 500 year drought event. However, as outlined above, SESRO will also enable raw water to be transferred to Southern Water and Affinity Water via their respective transfers. Both transfer schemes will have a regular, 'business-as-usual' flow, required as a 'sweetening' flow to keep water in the transfer pipelines fresh and to keep the raw water treatment facilities operational[37]. The regional water resource system is complex and dynamic, with dependencies on a range of factors such as population growth, meaning it is difficult to predict how individual resources will be used in the future. However, we anticipate that once SESRO is operational, its marginal cost will make it a relatively cheap source of water compared to other potential sources, and therefore the ongoing, regular use of its capacity will be maximised.

7.2.2 Options for operational control

For the purposes of this report, we set out below two options for 'business-as-usual' control over SESRO's operations. These are not exhaustive, and it is likely that what is ultimately put in place may contain elements of

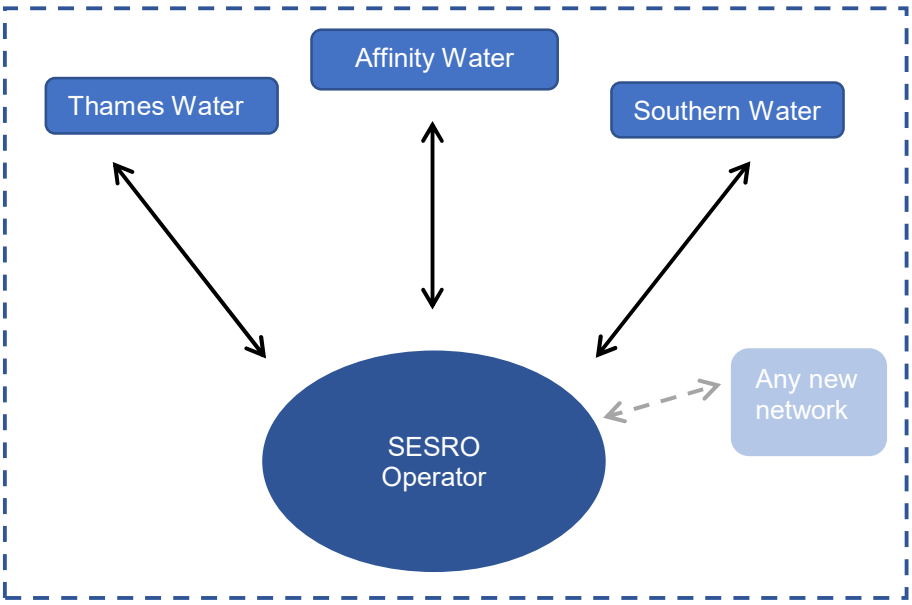
[35] While river and reservoir levels will be the main parameters, there are likely to be additional factors, such as water quality in the river or the reservoir, that also influence inflows and outflows.
[36] Anticipated to be between 2040-2053 based on the most recent WRSE Regional Plan.
[37] In the case of T2AT, at least part of the regular flow is expected to be required to meet Affinity Water's regular water demand, to replace existing Affinity Water abstraction licenses that are expected to be phased out in the future to meet environmental challenges.

both options – however these options provide a useful basis for discussion, and allow some key issues to be highlighted.

We expect that alternative mechanisms will be created to operate the reservoir during extreme situations[38], but this report focuses on normal operating conditions and these alternative mechanisms for extreme situations are not addressed further in this report.

Option 1 – 'independent SESRO'

In this option, SESRO would be operated independently, and controlled under a formal, pre-determined 'SESRO Storage and Usage Code' based on existing operational drivers/constraints (e.g. maintaining water levels at Teddington weir).

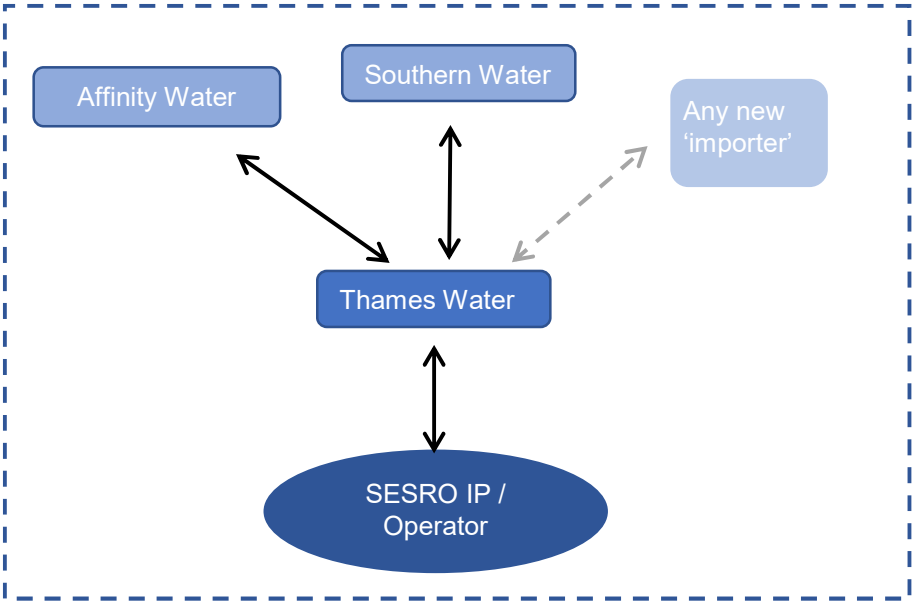


Under these arrangements, TWUL, Affinity Water and Southern Water (as well as any additional parties who wish to 'import' water from SESRO in the future) would have a direct, multi-lateral agreement with the SESRO operator (which would the IP under a SIPR model, CAP under DPC or TWUL under in-house), under the aforementioned 'SESRO Storage and Usage Code'. Conditions under which additional Bulk Supply Agreements (BSAs) could be agreed with new parties, or existing BSA conditions changed, would be set out in this code.

Option 2 – SESRO controlled by TWUL

In this option, SESRO would be controlled by TWUL, with bilateral BSAs between TWUL-Affinity Water and TWUL-Southern Water (as well as between TWUL and any new importer). Any modifications to existing BSAs or additional BSAs with new importers would be agreed bi-laterally between TWUL and the counter-party (i.e. other existing BSA parties would not be involved in these negotiations). Ofwat would have influence over BSA terms through the water trading incentive regime and associated requirement for companies to produce and comply with an approved 'trading and procurement code'. Further, should companies fail to agree bi-lateral BSAs, Ofwat could be requested to determine appropriate BSA terms[39]

[38] For example during a drought worse than that for which SESRO is designed, or a pollution incident that means other regional water sources are unavailable for use.
[39] As set out in Ofwat's *Bulk Supply Pricing – A Statement of Policy Principles* document



All costs would be borne initially by TWUL, funded by TWUL customer bills and costs recovered through bulk supply charges from Affinity Water and Southern Water customers (although there may be a time delay for Southern Water customers' contribution, as discussed in Section 7.3).

Discussion of options:

Under Option 1, the presence of a multi-lateral code gives all parties clarity and visibility of reservoir parameters and operations, as well as likely changes to the use of the reservoir and the subsequent impacts on their exposure to future water supply risks. Further, if the code is overseen by Ofwat, customers' value-for-money has direct regulatory scrutiny. In this way, Option 1 allows greater oversight of the principle of 'commercial neutrality' (whereby no party is favoured over another when it comes to the delivery of water as set out in agreements).

In order to achieve the same level of 'commercial neutrality' in Option 2, there must be robust mechanisms that ensure that there is no conflict of interest, even a 'perceived' one, for TWUL to share full information with all parties or share water fairly and efficiently. Although this could be seen as a potential risk compared to Option 1, the advantage of Option 2 is that TWUL would be directly incentivised to maximise opportunities for water trading under the water trading incentive regime (or its potential replacement beyond PR24[40]). It is not clear whether the incentivisation would be as great under Option 1, particularly if multiple water companies were required to agree to new exports of water.

Option 2 may also be more aligned to the indirect nature of Affinity Water's connection to SESRO. While T2AT will depend on SESRO as its source (at least during dry weather periods), it does not connect directly to the reservoir, as set out above. Therefore. Affinity Water is only able to access SESRO via an existing TWUL asset (the Lower Thames Reservoir system). As such, Affinity Water's operational relationship with SESRO is more accurately reflected by Option 2 (under which it has an indirect relationship via TWUL) than Option 1.

Implications of operating arrangements options on procurement models

Option 1 would align well to the SIPR model for SESRO, as the IP would be a natural 'independent operator'. On the other hand, it would be less aligned to an in-house delivery model whereby TWUL (i.e. not an 'independent' operator), as the incumbent undertaker, would be the operator of SESRO. Under DPC, Option 1 would align well during the initial DPC contractual period, but it is not clear how the operating arrangements would be maintained should SESRO operation transfer to TWUL at the end of the DPC contract. Should new DPC arrangements need to be put in place to take on the scheme at the end of the initial DPC period, it is not clear who would have responsibility/accountability for managing the procurement of the new DPC arrangements.

Under either DPC, SIPR or in-house delivery, TWUL could be the controlling party, and therefore Option 2 is feasible under all procurement models.

7.3 Commercial arrangements

This section sets out key considerations and principles for commercial arrangements between companies, focusing specifically on how costs are shared between different companies' customers.

Key considerations to determine the optimal commercial arrangements between water companies include:

[40] Ofwat proposes to adapt the current water trading incentive regime beyond PR24, but has retained the option of replacing it with an alternative mechanism. In either approach, Ofwat aims to encourage water trading where appropriate.

- Commercial arrangements should be driven by operational arrangements, and not the other way around. Cost and risk (i.e. the commercial arrangements) borne by each company's customers should be defined by the value they receive from the reservoir and the company's ability to manage the risk to them and their customers – cost and ability to manage risk will both be determined by how the reservoir is designed and operates.
- Investment attractiveness, to reduce finance costs and improve overall value-for-money – achieved by creating arrangements that are not unduly complex, and provide all parties (critically, the party that finances SESRO construction) with confidence that they will recoup their costs, and therefore minimises the risks that are built into the overall financing cost of the scheme
- Fairness – ensuring that each company's customers pay a fair share of the cost of SESRO, based on the benefit they receive from the scheme

These considerations may not always be fully consistent. Arrangements that ensure 'perfect fairness' across all customers may become complex, and lead to higher overall costs (i.e. lower overall value-for-money). Therefore, these considerations must be balanced against each other such that low overall costs are achieved while ensuring that no customers pay an unfairly disproportionate amount in relation to the benefit they receive.

For all three delivery models (in-house, DPC model, or SIPR model), there are key principles that the commercial arrangements would be based on. These can be summarised as:

1. Payment to the infrastructure owner (the organisation that owns SESRO – either the IP under SIPR, CAP under DPC or TWUL under in-house) will have two components, a capacity charge and a volumetric charge, with the amount of revenue paid through the capacity charge being significantly larger than that paid through the volumetric charge;
2. Apportionment of charges should be set with consideration to interregional and intertemporal/ intergenerational fairness, while avoiding large year-to-year changes in bills, maintaining long-term value-for-money, providing flexibility for other companies to potentially connect in future;
3. The infrastructure owner must have sufficient confidence that they will be able to recover their costs through the capacity and volumetric charges from the related water companies; and
4. Appropriate incentivisation to optimise the use of the reservoir (provided capacity needed for resilience purposes is maintained), to maximise cost efficiencies, make use of economies of scale and minimise environmental impact.

In addition to the above, care needs to be taken to avoid any risks relating to accounting and/or financial covenants, to ensure that the commercial arrangements don't result in issues for incumbent financiers.

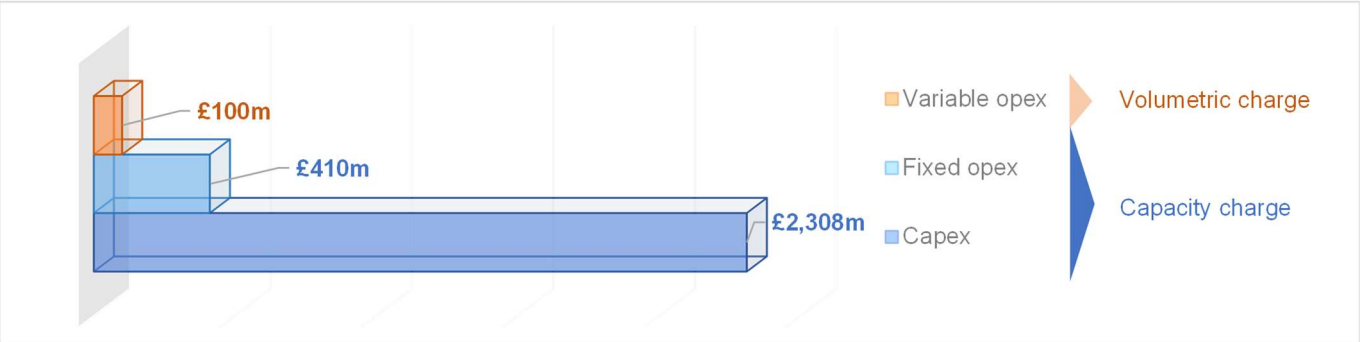
7.3.1 Capacity charge and the volumetric charge (once SESRO is operational)

As presented above in Table 2, SESRO costs are expected to be £2.3bn initial capex along with a £4.1m fixed annual opex (expenses necessary to maintain the reservoir regardless of use, etc.) and £1.0m variable annual opex (expenses incurred only when the reservoir is used, e.g. volume-based maintenance, energy cost of pumping, cost of maintaining the pump stations).

During operations (charges during the construction period are addressed later in this section), capacity charges will pay for the fixed portion of costs, i.e. capex, fixed opex and financing costs, whereas the volumetric charges, by definition, will cover the volume-dependent variable opex.

We present the relative scale of capex and fixed opex (covered by the capacity charge) compared to variable opex (covered by volumetric charge) below in Figure 9.

Figure 9: Share of capex and lifetime opex [41]



Apportionment principles

In effect, the capacity charges covering the initial capex and fixed opex will pay for two kinds of benefits:

- Resilience benefits: The reservoir will be built as a resilience asset that is sized to cover the demand from all three companies in a 1 in 500 years drought. Therefore, its primary benefit is providing an insurance against extreme weather events and ensuring water supply security for water network consumers. Based on this, the charge may be apportioned between the relevant companies based on the ratio of resilience it provides to each company's customers, i.e. what is the added security provided by this reservoir compared to the counterfactual (no SESRO) for those group of customers. This would need to be agreed between the companies, for example based on water supply modelling.
- Water supply benefits: However, as set out in Section 7.2, SESRO will not only be a resilience asset – water will not only be taken during an extreme drought year with the resource sitting idle in all other years. Southern Water and Affinity Water (indirectly) will take water from SESRO as part of their regular baseload supply; and it makes economic and operational sense for TWUL to also use SESRO as a water supply asset, as long as the water level in SESRO stays above the minimum level necessary for drought resilience. Given that SESRO will be a baseload water supply asset for all three companies continuously, there may be a logic to apportion part of the capacity charge based on usage.

Each apportionment basis requires robust analyses and assumptions that the water companies agree on. Regarding resilience benefit-based apportionment, this benefit is unlikely to be able to be directly quantified and apportioned to each company's customers in a straightforward manner. SESRO is sized to provide resilience across the whole system of water resources across the south east, based on nine different scenarios across a planning horizon through to 2100, and taking account of other existing or planned water resource schemes in the region. Therefore, the actual resilience provided by SESRO to each company's customers varies over time, and depends on what water demand scenarios play out in reality. The apportionment of this benefit between different company's customers could be agreed using assumptions based on the outputs of this modelling, but consideration would need to be given as to whether this assumption-based apportionment then remains fixed or is adjusted over time, potentially in response to real-life conditions. If this apportionment was to be adjusted over time, the timing of adjustments would need to be set carefully (for example, a minimum of five years between adjustments) to avoid excessive cost fluctuations and/or changes within regulatory periods.

Regarding usage-based apportionment, there are two potential approaches that could be taken:

a. Based on actual usage – Southern Water has a direct link to SESRO and its actual usage can be directly measured via flow meters. On the other hand, Affinity Water and TWUL have no direct connections with SESRO (their offtakes are via the River Thames), and therefore it may be challenging to measure their consumption specifically from SESRO; and

b. Based on planned usage – current water resource modelling outputs could be used to determine how much each company is projected to use over time.

7.3.2 Options for apportioning capacity and volumetric charges between different companies' customers

Based on the above, it makes sense for the volumetric charge to be apportioned based on actual usage among the companies involved, provided this can be measured with sufficient accuracy.

The capacity charge could be either:

i. Apportioned using a pre-determined ratio, based on a combination of projected resilience benefit and planned water usage between companies, or

[41] Assumes SESRO will have a 100-year lifetime before a major refurbishment is needed; annual variable and fixed opex estimates are multiplied by 100 to bring them to a comparable level with the initial capex investment.

ii. Apportioned partly using a pre-determined ratio, based on a combination of projected resilience benefit and planned water usage between companies and partly based on actual usage.

Option (i) has the advantage of simplicity and remaining fixed over time (assuming the resilience benefit apportionment remains fixed). Option (ii) incorporates the fact that the baseload water supply benefit received by different companies' customers will vary, and could therefore be seen to be a fairer reflection of the use that different companies' customers make of SESRO. However, this option (ii) will be more complicated to manage and may lead to significant fluctuations to costs for different customers over time.

Figure 10 and Figure 11 below show these apportionment approaches.

Figure 10: Visual representation of option (i) apportionment (illustrative only)

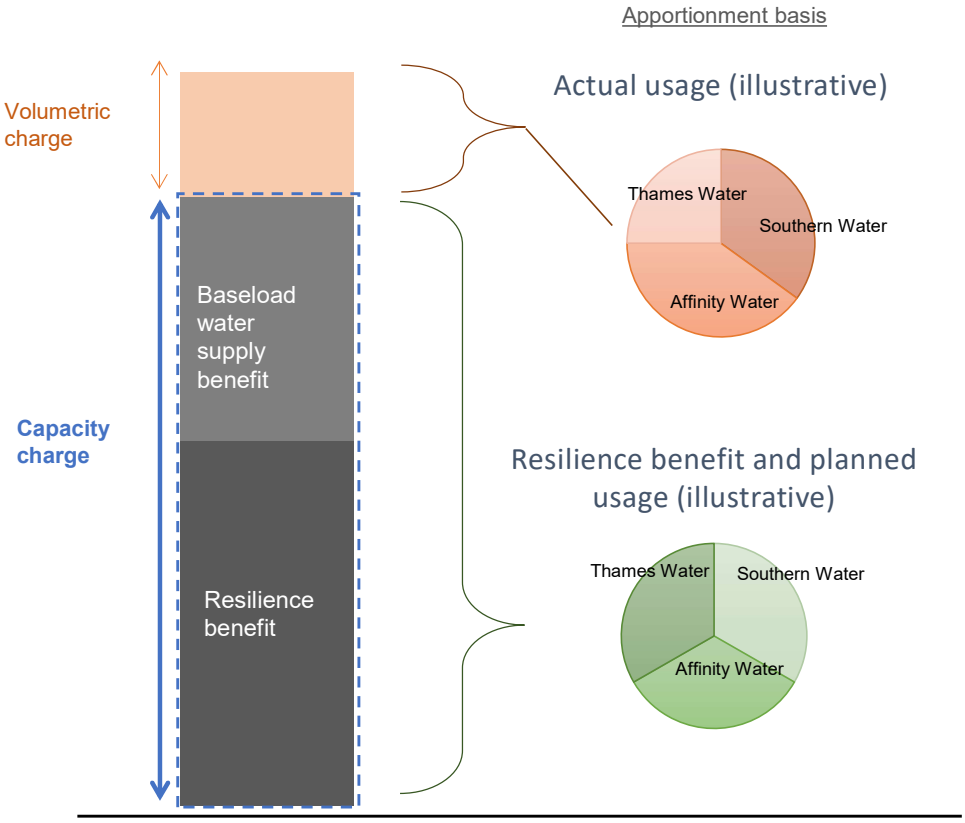
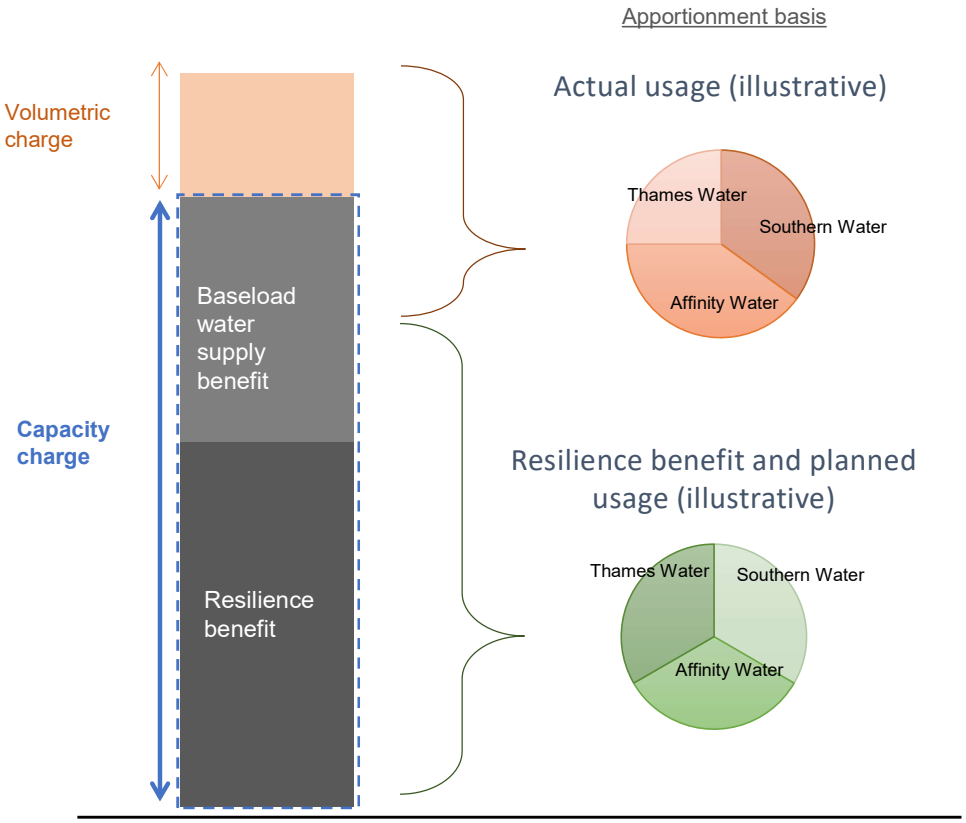


Figure 11: Visual representation of option (ii) apportionment (illustrative only)



7.3.3 Interregional and intertemporal fairness in apportionment

In the section above, possible apportion approaches were outlined as usage-based and resilience benefit-based. These approaches should be designed in consideration with the following issues of fairness:

1. Connection of Southern Water: Currently SESRO is planned to be constructed by around 2040, while T2ST could be constructed as late as 2053. Should there be a significant delay between construction of SESRO and construction of T2ST, payment from Southern Water customers can be arranged in several ways:
    a. Southern Water pays their full contractual share of capacity charge amount from the day SESRO is built (this could be from the start of construction or from when the scheme becomes operational, dependent on the procurement model implemented – charges during the construction period are discussed further later in this section), but volumetric charges would be zero until T2ST is built
    b. Southern Water pays a reduced version of their contractual share of capacity charges until T2ST connects. After connection, they pay a proportionate amount compared to TWUL and Affinity Water customers
    c. Southern Water starts paying capacity and volumetric charges only after T2ST connects to SESRO. After connection, they pay a proportionate amount compared to TWUL and Affinity Water customers
    d. Southern Water only starts paying capacity and volumetric charges after T2ST connects to SESRO, and pays a slightly higher amount compared to TWUL and Affinity Water customers, to 'repay' the amounts they have paid in earlier years for the proportion of the capacity provided for Southern Water's benefit

    In options (a) and (b), Southern Water customers would be paying charges to cover a large capex investment they do not yet have access to. This would put them at an unfair position compared to TWUL or Affinity Water customers who have already started benefiting from SESRO. Options (c) and (d) appear 'fairer' to Southern Water customers, but would lead to variations in annual bills for Affinity Water and TWUL customers between periods before and after Southern Water customers start paying, and would also put TWUL and Affinity Water customers at risk of over-paying should Southern Water never build T2ST (or build it much later than expected). In addition, option (c) may be considered unfair to Thames/Affinity, given that their customers would pay a larger share until Southern Water's connection, for an asset that will also proportionally benefit Southern customers in the decades to come. Finally, options (a) and (b) may be contractually simpler and provide a higher degree of confidence and smoother revenue stream to SESRO investors, possibly reducing financing costs and leading to an overall lower lifetime cost.

2. Connection from new water importers: SESRO is planned as a 100+ year asset, and during this long timeframe, there may be restructuring of existing water companies, or new importers (for example South East Water) that connect to SESRO. Given that the capacity charges will be significantly greater than the volumetric charges, new networks connecting years after SESRO is built and only paying volumetric charges then can create an issue of fairness to the customers of the original water companies. In such a case, there may be two events: If there was a re-structuring of companies and the "new" company connecting to SESRO is serving the same population that used to be part of the population served by one or more of the original three water companies, then those customers have already paid the adequate capacity charges through their previous water supplier. They should not be asked to retrospectively double-pay. However, if a new importer connecting to SESRO is serving a completely different Water Resource Zone (e.g. connecting with a new pipeline to South East Water) consideration should be given as to whether the new customers should contribute to the original capex. This would depend on the terms of the BSA for the new importer – for example, the new importer may not be required to fund SESRO capex if its supply was interruptible such that it didn't receive the same resilience benefits as the original companies.
3. Intergenerational fairness: The timeline for the revenue stream to repay the £2.3bn capex investment will have a significant impact on intergenerational fairness. Even though SESRO will serve the region, and provide a broadly similar level of benefit to customers, for 100+ years. Therefore, the depreciation period and revenue mechanism should be designed in a way that allows the infrastructure provider to recoup its costs in a cost-efficient way, but also balance added costs for the current generation of customers with the benefit provided to future generations.

7.3.4 Sufficient guarantees for the infrastructure provider

In order to drive the lowest finance costs, the investors that finance SESRO (whether delivered under DPC, SIPR or in-house) must have a high level of confidence in the future revenues – i.e. that the three companies will indeed pay their charges. This can be achieved in a number of ways, alternatives being a joint liability mechanism, BSAs aligned to the duration of the DPC contract, or the SIPR licence. For example, Southern Water signed an 80-year BSA with Portsmouth Water to support the delivery of the Havant Thicket Reservoir[42].

In addition to payment guarantees from networks, a key factor in increasing investor confidence and driving down financing costs would be a straightforward approach to charging different users (including apportionment between companies) that is free from overcomplications and uncertainties.

7.3.5 Appropriate incentivisation to maximise the use of surplus water provided by the reservoir

As set out in Section 7.2, the marginal cost of SESRO water is likely to be relatively cheap compared to potential future alternative (for example, water recycling facilities), and it is therefore in customers' interest to maximise the use of surplus water as long as it does not put resilience requirements or T2ST/T2AT 'sweetening flow' requirements at risk. One potential mechanism to enable this would be to allocate a fixed proportion of the surplus water to each company (potentially based on the apportionment of the capacity charge) for trading purposes. Alternatively, under DPC or SIPR the CAP or IP could be given rights to trade surplus water, or be incentivised to encourage trading between the companies that already have access such that the efficient use of SESRO water is optimised.

7.3.6 Charges during the construction period

SESRO has an anticipated construction period of around ten years. Depending on the details of the procurement model implemented, there may or may not be a need for charges during this period – for example, under the standard form DPC model, there would not be any charges during construction, whereas under in-house delivery charges would start as soon as value is added to RCV (i.e. as the asset is constructed). Therefore, charges during construction may need to be considered further as the details of the preferred procurement model become clearer.

7.3.7 Summary and conclusions

The future commercial arrangements for SESRO will include a fixed capacity charge, and variable volumetric charges, where the capacity charges will be significantly greater than the volumetric charges. Further, charges should be apportioned between different customers based on the benefit they derive; specifically resilience benefits (which are difficult to measure) and water supply benefits (which are easier to measure but still challenging). Further, volumetric charges should be apportioned based on water supply benefit only, while capacity charges could be apportioned between companies' customers based on a combination of the water supply and resilience benefits they derive, or based solely on resilience benefit. Finally, the varying timing of when different companies start using the reservoir and intergenerational fairness is likely to have an impact on how charges are apportioned between different customers over time. In summary – creating a 'perfectly fair' cost apportionment mechanism that incorporates all of these factors will be complex.

[42] Portsmouth and Southern sign Bulk Supply Agreement for Havant Thicket (thewaterreport.co.uk)

This complexity needs to be considered in the context of the materiality of the impact on customer bills. As set out in Section 7.1, the likely total bill impact of SESRO will only be around 2-3% of the average customer bill. Therefore, the difference between a 'simple and acceptable' and 'complex but perfectly fair' apportionment will likely be a very small percentage of the average bill. Set against this is the impact of the charging apportionment mechanism on investor confidence in the long-term revenue stream, which will influence the level of risk that investors build into their finance costs. On the one hand, a complex apportionment mechanism might imply a lack of stability and predictability in future revenues. On the other hand, a simple mechanism may not provide flexibility to accommodate changing circumstances over the long-term, increasing the risk of future challenge or regulatory intervention. At this stage, it is not yet clear where the optimal balance between 'perfect fairness' and lowest overall cost lies, but there may need to be a trade-off between simplicity and flexibility – potentially achieved through a fixed mechanism to start, with flexibility for future change as required, which could be overseen by Ofwat. We recommend this is investigated further beyond Gate 2, as set out on Section 7.4.

7.4 Conclusions and recommendations

The development of SESRO is at an early stage, and future capacity requirements and likely usage are still being explored. For most aspects of the operating and commercial arrangements, it is too early to make firm decisions. However, we are able to provide recommendations to take forward for further exploration towards Gate 3, and indicative conclusions for some aspects, as below:

7.4.1 Operating arrangements

- **Conclusions:** It is too early to definitively conclude whether Option 1 ('independent' SESRO) or Option 2 (controlled by TWUL) is more appropriate at this stage. However, the key factors for the decision will likely include (a) the potential for new importers to offtake from SESRO, and (b) the benefits of a multilateral code-based vs. bilateral contract-based arrangement (as well as different water companies' perception of this). It is also likely that the operating regime of SESRO may change over time and may differ markedly from currently anticipated usage once it becomes a 'live' source for different water companies to incorporate into their overall water supply system.
- **Recommendations:** Further analysis of the future usage of SESRO under different scenarios should be undertaken to better understand the likely ranges of demand (and drivers for demand) by different companies over time. This should be delivered alongside ongoing WRSE regional modelling, recognising that the modelling itself is based on assumptions of water company demand over time. We recommend that this is accompanied by further development and investigation of both code-based and contract-based arrangements, to understand, for example, how they might work in different scenarios, the conditions needed to make them successful, and their relative benefits and risks. A key part of this will be further engagement between TWUL, Southern Water and Affinity Water to ensure a common understanding and understand the varying appetites and perceptions of risk under different arrangements. These two activities taken together will enable a more informed discussion and agreement as to the most appropriate operating arrangements for SESRO. We also recommend further investigation of the operational interdependencies between different parts of the regional water resource 'system', so that potential risks and benefits of a regional system operation approach can be better understood.

7.4.2 Commercial arrangements

- **Conclusions:** As set out above, we conclude that future commercial arrangements for SESRO (during the operational phase) will include a fixed capacity charge, and variable volumetric charges, where the capacity charges will be significantly greater than the volumetric charges. Construction phase charging arrangements will depend on the procurement model implemented, as some procurement models (such as the 'standard form' DPC model) may not result in any charges during construction. Once SESRO is operational, volumetric charges should be apportioned to different companies' customers based on the actual volume they draw from the reservoir. Fixed charges could be apportioned between different customers based on a combination of the water supply and resilience benefits they receive, intergenerational fairness and the timing at which they gain access to the reservoir. This approach would have the benefit of aligning customer charges to the benefit they receive, and could therefore be perceived as the 'fairest' method of apportionment – although the apportionment ratio will likely be complex, difficult-to-determine and could lead to significant variations in individual companies' customers' costs over time. Alternatively, capacity charges could be apportioned using a pre-determined, fixed ratio, based on each company's anticipated need for SESRO based on current water resource modelling. This approach has the advantage of simplicity, stability and predictability, but may be perceived as being misaligned with the benefit received by customers should one company take significantly more or less water from SESRO than currently anticipated. At this stage, it is not yet clear where the optimal balance between 'perfect fairness', long-term flexibility and stability/predictability (and therefore the likely lowest overall cost) lies.
- **Recommendations:** Further investigation, including quantitative modelling of the overall cost of SESRO as well as the apportionment of that cost to different companies' customers, is recommended. This should be

informed by engagement with potential investors to better understand the link between confidence in future revenue streams and how that revenue is apportioned between parties and over time. This modelling should also be informed by the analysis of future usage by different companies under different scenarios, and further exploration of how the resilience and water resource benefits provided by SESRO can be apportioned to different companies' customers. Quantifying the realistic range of bill impacts under different apportionment mechanisms under different future scenarios will enable an informed decision about the most appropriate balance between the complexity and fairness of these mechanisms. Further, as the requirement for revenue during construction under the preferred procurement model becomes clearer, commercial arrangements during construction should be investigated further.

8 Procurement risks, plan and market engagement

8.1 Procurement risks

This section sets out the key risks associated with procurement of the SESRO scheme. The procurement strategy for this scheme is at an early stage, and as such a detailed procurement risk appraisal is not possible at this stage. However, the Infrastructure and Project Authority's *Project Routemap: Procurement* module[43] sets out some typical high-level procurement-related issues that are often encountered on major projects. As shown in Appendix 9.1, these issues can be simplified to four summary procurement risks – these risks, and their mitigations, are shown in Table 9 below. The mitigation actions are addressed in the market engagement and forward procurement plan, outlined in Section 8.

For the SIPR model, these risks are particularly acute, as the promoter would procure the construction contracts separately to procuring finance. Because of this, should procurement of construction contracts be perceived to be of poor quality, there is a significant risk that the project will fail to attract competitive finance costs.

Table 9: Summary procurement risks and mitigations for SESRO

Procurement risk	Mitigation
Sub-optimal detailed procurement/contract strategy and/or plan	Implementation of a robust procurement and contract strategy development process, including a detailed understanding of key scheme commercial risks, informed by comprehensive market engagement, and developed with the support of specialist advisors (e.g. legal) where necessary.
Misunderstanding of or insufficient promoter capability	Ensuring the required resources are in-place to deliver the procurement strategy are in-place, including specialist advisors, and that the required operating model (capabilities, organisation structure and supporting processes) is in place to manage the delivery and future operation of the scheme.
Misunderstanding of supply chain capability and/or appetite	Undertaking a rigorous market engagement process, and using this to inform the detailed procurement, commercial and contract strategy.
Misalignment between project requirements and what's procured	Ensuring the procurement, commercial and contract strategy is developed with an in-depth understanding of project technical and engineering requirements and risks, and any constraints driven through the planning process. This can be achieved by involving technical teams in the procurement, commercial and contract strategy development process, and through running a comprehensive market engagement process whereby prospective bidders are asked to provide feedback on the alignment between the procurement approach and desired project outcomes.

8.2 Market engagement and forward procurement plan

This report has concluded that the SESRO scheme has the potential to deliver enhanced VfM for customers through DPC or SIPR, and as such should proceed to Gate 3.

A more accurate assessment of likely VfM under both DPC and SIPR is a critical area for development between Gates 2 and 3. The report has concluded that further work is required to explore the potential financing and in particular capex savings under DPC and SIPR models in more detail, including:

- Financing costs associated with both the DPC and SIPR models. Modelling at this stage is based on a range of potential costs and a better understanding of what is likely will inform more accurate VfM modelling.
- Capex efficiencies will be key to driving a lower cost to customers under either DPC or SIPR. Further work is needed to explore the ability of a third party to drive capex efficiencies relative to DPC and SIPR, taking into account the relative simplicity of SESRO construction, and the fact that the most significant scheme risks are either typical water company capital delivery risks, or would be difficult for the third party to control (for example the potential delay risk related to the dependency on rail transport). Potential bidders and specialist contractors should be engaged ahead of Gate 3 to help inform the significance of these risks and gain a better understanding of likely innovations and other methods to meet that efficiency challenge.

The above is based on DPC and SIPR models as currently understood. Value for money analysis should be updated to consider any relevant changes in circumstances between Gate 2 and Gate 3. For example:

- This report is based on the current eligibility criteria for triggering a new Infrastructure Provider, which includes SIPR being appropriate in the event that *"…the infrastructure project is of a size or complexity that*

[43] Procurement_-_FINAL.pdf (publishing.service.gov.uk)

threatens the incumbent undertaker's ability to provide services for its customers..". By nature, passing the SIPR model is a difficult test to prove, reflecting the intention of this legislation when first enacted. Reflecting this, we have concluded in this report that SESRO is unlikely to meet the SIPR criteria as it currently stands. However, during the preparation of this report, discussions were held with RAPID to understand if this eligibility criteria could be relaxed, and those discussions are ongoing at the point of submitting this report.[44]

- This report is based on the standard DPC model report as described in Ofwat guidance. However, during the course of this project discussions have been held with RAPID to understand the appetite to make changes to the DPC approach where appropriate to unlock benefit for customers e.g. the possible introduction of stage payments to create a revenue stream during construction (of particular value to SESRO given the c.10 year construction period), and using a higher gearing ratio to reduce WACC. This dialogue remains ongoing at the time of writing this report, but if changes to the DPC model are possible, it may be appropriate to consider these possible changes, and the implications for the value for money of applying DPC procurement to these schemes, for Gate 3.
- This report is based on the latest revision of the WRSE plan, but the WRSE plan is currently being reviewed and an update is anticipated in the Summer 2022. Depending on what (if any) changes are made, it may be necessary to update this Procurement Strategy to support the Gate 3 submission.
- Since financial markets are also evolving, the assessment of financing costs used in the value for money calculations should also be updated to take into account this updated information.

Ofwat requires TWUL to submit a procurement plan for SESRO as part of the Gate 2 submission. The procurement plan needs to consider the whole period until the preferred commercial arrangement has been procured, not just the period between Gate 2 and Gate 3. To assist the SESRO programme team to prepare its procurement plan, we have considered the activities the scheme Promoter needs to undertake in order to determine the preferred procurement model for SESRO, and to prepare for the DPC procurement process.

8.2.1 Market engagement and procurement activities

Some of the different kinds of activities scheme promoter(s) may wish to undertake, and issues which they may wish to consider, include:

- **Commercial risk analysis –** further understanding of key scheme specific risks (for example the dependence on Network Rail to enable rail transport of materials to site throughout the construction period), and their potential mitigations. This will include any constraints built into the SESRO design or delivery approach through the stakeholder engagement and planning consent process.
- **Market engagement (with the construction supply chain) –** structured engagement with key construction contracting organisations to better understand their views on the scheme, including:
    - Project risks and dependencies (as above), including their materiality, how they would be mitigated, and how they would be priced and treated contractually;
    - Potential construction methodologies and programming, including whether there are any opportunities to expedite or de-risk construction, how 'specialised' particular elements of construction are for a reservoir of this size, and any specific construction or supply chain risks;
    - If/how SESRO would be priced or contracted differently under different procurement models, for example contracting with an investor as opposed to TWUL, and what modifications to each model would mitigate this; and
    - Understanding the attractiveness of SESRO as a nationally significant, once-in-a-lifetime, sustainability-driven project – including whether this is genuinely attractive or seen as inviting extra scrutiny and therefore risk. This should be undertaken with the aim of making SESRO more attractive to the supply chain to increase competition when it comes to the future procurement event.
- **Market engagement (with potential investors) –** structured engagement with investor organisations to better understand their views on the scheme, including:
    - Project risks and dependencies (as above), including their materiality, how they would be mitigated, and how they would be priced and treated contractually, and how easily these could be passed to the construction supply chain;
    - Understanding the attractiveness of SESRO as a nationally significant, once-in-a-lifetime, sustainability-driven project – including whether this is genuinely attractive or seen as inviting extra

[44] As part of the Government's policy paper designed to improve economic regulation in the UK, Government asked Ofwat to undertake a bespoke review of competition for the provision of infrastructure in the water sector, welcoming Ofwat's views on how they and Government can seize opportunities for competitive strategic investments and address any barriers to doing so. See further information at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1051261/economic-regulation-policy-paper.pdf

scrutiny and therefore risk. As above, this should be undertaken with the aim of making SESRO more attractive to investors to increase competition when it comes to the future procurement event;

- Consultation on different investor appetites for DPC vs. SIPR, and potential characteristics of the different models such as preferences for creating investor-led SPVs (DPC) vs. financing pre-created SPVs (SIPR), RAB model funding (SIPR) vs. DPC-style fixed revenue models, the significance of a direct relationship with the regulator (under SIPR) and what risks would be more/less acceptable under each model. This includes identifying modifications to the DPC model that could improve value for money; and
- Early views on potential deal structuring and financing arrangements including gearing, cost of equity and cost of debt.

(Market engagement is divided into three progressive stages, 'early market sounding', 'soft market testing', and 'formal market testing', as detailed further below)

- **SIPR & DPC Modelling Activities** –building a more detailed financial model that incorporates insight from the above risk analysis and market engagement activities, in order to make a robust VfM recommendation on the preferred delivery model at the Control Point C. Additions to the model may include debt refinancing repayment schedules, equity and debt financeability metrics (i.e. dividend cover, AICR), functionality for stress testing as well as refining financial, capex and opex assumptions following soft market engagement activities and expert input. In addition, this will include modelling of any identified modifications to the DPC model that may improve value for money, to ensure a robust and representative comparison between In-house, SIPR and the 'enhanced' DPC model (rather than the 'standard form' model assessed in this report). For SESRO this should also include capturing the impact on both TWUL and Affinity Water, including consideration of the role they play in the commercial arrangements (e.g. as the off-taker in Affinity Water's case).
- **Engagement with Ofwat, RAPID and Defra** – successful outcome at the gates and control points will be dependent on appropriate and proportionate engagement with Ofwat and RAPID. This should help in identifying potential issues before the submission takes place, as well as providing the regulator to have an input in to the overall process. This is especially going to be important for Control Point C where preferred delivery route would need to be identified, and in between C and E where a number interrelated drafting, planning and modelling activities will be taking place. Any proposed modifications to the DPC model to improve value for money, as identified through market engagement and detailed modelling activities outlined above, will also need to be presented and agreed with Ofwat through this process. Further, for SESRO in particular, specific engagement with Ofwat and Defra will be needed on the likelihood and timescales for legislation change to enable SESRO to be specified under SIPR, and the process to achieve this. This engagement will be needed to be able to make a confident decision on SIPR vs. DPC at Control Point C.
- **Development of operating and commercial arrangements** – further analysis of the future usage of SESRO under different scenarios, to better understand the likely ranges of demand (and drivers for demand) by different companies over time. Alongside this, further engagement between TWUL, Southern Water and Affinity Water will be needed to understand the varying perceptions of code-based vs. contractual arrangements and ensure a common understanding of how these arrangements would work in practice. Developing commercial arrangements requires quantitative modelling of the overall cost of SESRO as well as the apportionment of that cost to different companies' customers, informed by the emerging preferred operating arrangements, and further exploration of how the resilience and water resource benefits provided by SESRO can be apportioned to different companies' customers.
- **Engagement with other stakeholders** – the scheme delivery programme will also be highly dependent on getting the external and internal right expertise and inputs at the required times. For example, the scheme Promoter will likely require input from legal and commercial advisors when drafting contractual agreements between TWUL and Affinity Water as needed, appropriate outputs of the engagement with Drinking Water Inspectorate, output of the engagement with Environment Agency and local/regional authorities for obtaining required consents for the scheme.
- **DPC/SIPR/in-house delivery contract drafting** – once the preferred procurement model has been determined, and relevant risks are sufficiently understood and quantified, an appropriate contractual agreement will need to be drafted. Risks will need to be appropriately apportioned between the water company, and investors/supply chain as appropriate, so that risks are allocated to the party that is best placed to manage them. Contractual documentation is likely to undertake a number of iterations between Control Point B and D and will be dependent (and inform) the outputs within detailed modelling and market engagement.
- **Procurement Strategy detailed development** – in parallel to contract drafting, a good oversight will need to be obtained around the design of tendering activities. Activities may involve drafting tender scoring methodology, planning detailed activities around each of the tendering stages, and ensuring the right resources are in place to manage the process.

- **Additional internal activities** – includes design, technical and delivery activities appropriate for a scheme of SESRO's magnitude, including finalising design and technical readiness plans, undertaking benefits and risk appraisals and engineering activities to determine outputs and service levels.
- **Tender process:** following Ofwat's Gate 4/OBC approval, call for competition would be issued, and formal market engagement can start. During PQQ stage (~6-months) bidders will be evaluated according to commercial and/or technical criteria and few shortlisted bidders will be allowed to proceed. During ITT stage (~12months) shortlisted bidders to comment on contract, and preferred bidder is selected. During preferred bidder stage commercial contract is finalised and agreed, financial close is reached and FBC submission is made to the regulator. Tender activities are likely to require 18 to 24 months in total given the size of the scheme, and depending on the preferred procurement model selected[45].

As set out above, market engagement is key to ensure that the right procurement model is selected, and designed to drive best value for money. These activities would take place over several phases throughout the gated process, including:

- **Early Market Sounding:** this is an optional stage for Ofwat's control point B and sould include both investors and the construction supply chain to inform views on scheme timelines, key risks and opportunities, as well as 'warming up' the market. This is likely to be mainly conducted through structured, one-to-one meetings with specifically targeted organisations
- **Soft Market Testing**: during this time water company will need to engage with potential investors and construction contractors to present the scheme, timings, scheme-specific risks, dependencies and constraints, and gathering feedback on how risks are allocated and priced, the likely structure of the deal, and financing arrangements including gearing, cost of equity and cost of debt. This will help to inform input parameters for the detailed modelling needed for the VfM case at Control Point C. This is likely to use a combination of presentations, workshops and bilateral meetings to communicate with the investor and supply chain community. This stage may last between 6 to 18 months.
- **Formal Market Testing**: during formal market testing stage (which would commence after publication of the Prior Information Notice (PIN)), we would expect a number of targeted workshops taking place with potential investors and supply chain organisations, as appropriate to the preferred procurement model. These may cover scheme optioneering, procurement approach, contract details, construction and operations of the asset, ground investigation, finance & legal activities etc. Formal market engagement may last 12 to 24 months.

A forward-looking procurement plan for SESRO is presented below. This plan is part of the broader Project Delivery Plan (Appendix F-1), and is based on the best information that is currently available. However, as this scheme proceeds beyond Gate 2, the scheme Promoter should consider whether further updates to the plans may be required in light of feedback obtained through market engagement and WRSE activities (which could influence the timing of when schemes need to be delivered by). This procurement plan will be developed further, into a fully detailed plan, for Control Point C.

8.2.2 Procurement Plan – SESRO Scheme

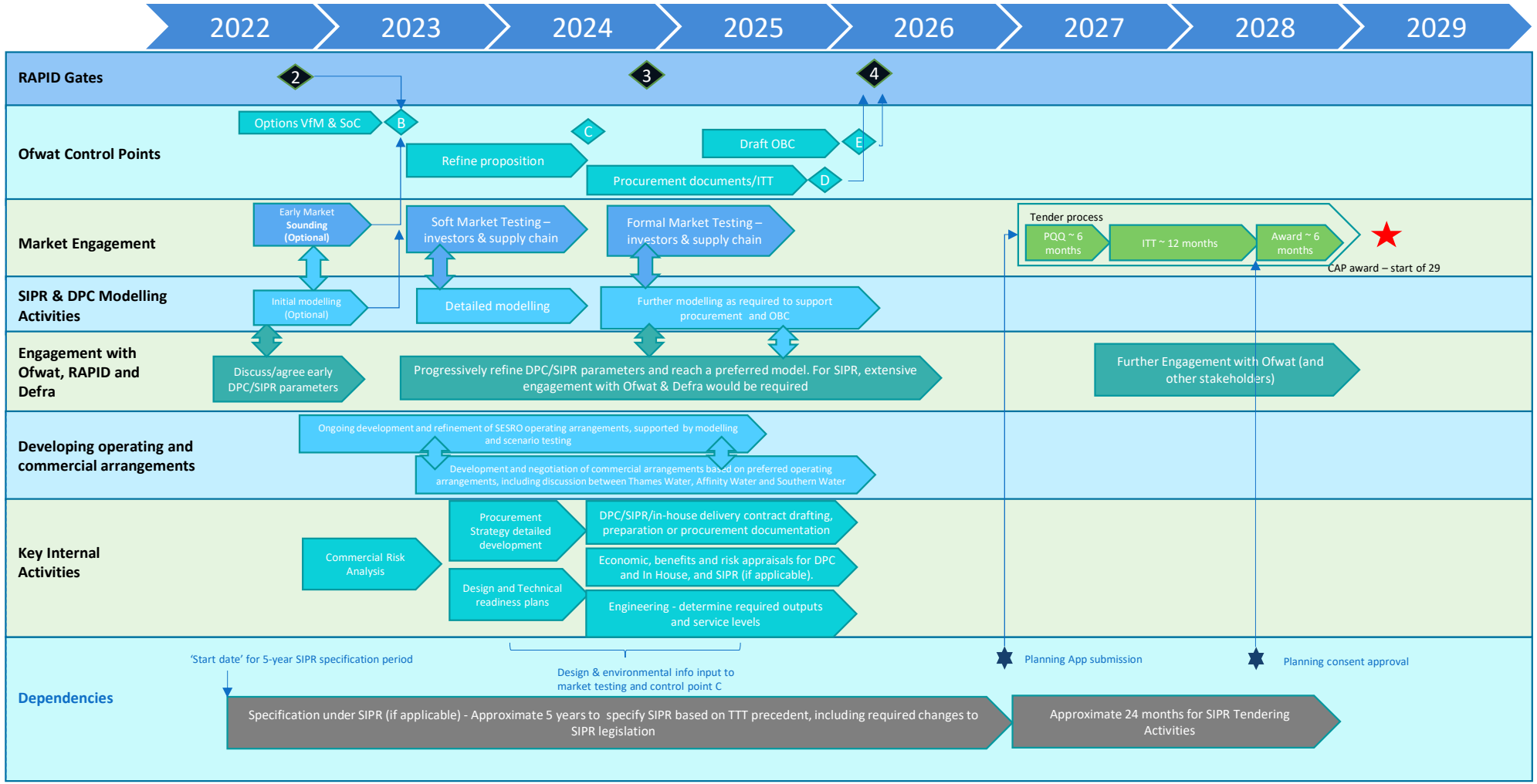
The plan below depicts key procurement activities that will need to take place in order to meet CAP award date, currently scheduled for beginning of 2029.

Besides passing relevant Ofwat's control points, achieving the 2029 date will be dependent on achieving planning application submission by end of 2026 as well as getting DCO approved by mid-2028. Additionally, year 2025 is looking to be particularly busy with number of different CAP and Market Engagement related activities taking place concurrently. This could be mitigated by producing additional plans covering more detailed activities, aiming to identify and mitigate potential bottlenecks within the critical path. We envisage that additional work is required to fully mitigate this and other potential risks. A key milestone in the plan is Ofwat's Control Point C, planned for mid- to late-2024. This is the point at which a preferred procurement model needs to be selected and justified to Ofwat, to enable formal procurement planning and development of contractual documentation to commence. For SESRO, this includes having sufficient confidence that the scheme will be specified under SIPR (including legislative change as necessary), should SIPR be the preferred procurement model at this stage.

An additional key risk associated with SIPR is the time taken for legislative change to enable SESRO to be specified under SIPR regulations. At this stage, timings associated with this are uncertain, and therefore it is not clear whether this is on the critical path for SESRO. Further engagement with Ofwat and Defra (as set out in Section 8.2.1 above) will inform the activities and timings associated with this, which can be incorporated into the broader plan as it develops. No market engagement has been undertaken so far on this scheme.

[45] For comparison, United Utilities' HARP scheme, currently out for procurement under DPC, has a planned procurement event duration of c.23.5 months from commencement to financial close (PQQ – c.4 months, ITN c.15 months, Award c.4.5 months).

Figure 12: Procurement plan for SESRO



9 Appendices

9.1 Typical procurement risks – based on the Infrastructure and Project Authority's *Project Routemap: Procurement Module*[46]

(reproduced from Project Routemap: Procurement Module, *Infrastructure and Projects Authority*

Typical findings relating to procurement	Summary procurement risks			
This list describes situations that might arise and would indicate that the approach to developing project procurement needs improvement. Other relevant modules may also help you close identified capability gaps.	Sub-optimal detailed procurement and contract strategy	Misunderstanding of promoter capability	Misunderstanding of supply chain capability and/or appetite	Misalignment between project requirement and what's procured
There is a disjointed relationship between the sponsor, client, asset manager and market with no clear understanding of risk allocation and no incentive for collaborative working.	✓	✓	✓	✓
A new client model (for example, establishing a fully integrated team) is being proposed, which the client/supply chain organisations do not have previous experience of applying successfully.	✓		✓	
The client model is not aligned with the proposed procurement strategy. For example, adoption of a thin client model with significant retained obligations.	✓	✓		
The requirements are poorly articulated or conflicting, so the purpose of the project and/or what it needs to deliver is confusing.				✓
The client does not understand the capacity, capability nor the market appetite to deliver the project.			✓	
The current supply chain structure is overly complex resulting in inefficiencies and failure of suppliers to work together to meet client needs.	✓			✓
Inadequate time has been allowed for the tender process, and tender documentation issued to the market is incomplete. This risks rushed solutions and poor-quality bids leading to problems downstream during delivery.	✓			
The client over-prescribes how the supply chain should do the work, which limits opportunities for the supply chain to innovate or add value.	✓			✓
The tender process and contract performance indicators are disproportionate to the size and complexity of the project, potentially reducing the pool of bidders and stifling competition and innovation.	✓			✓
Elements of the contracting model (risk allocation, incentivisation) have not been fully stress tested to identify potential unintended consequences, for example, limiting innovation or social value.	✓			✓
The evaluation criteria (technical, behavioural, ESG) are not structured in a manner to differentiate between suppliers. This causes price to become the determining factor obscuring the original intent of a balanced tender process.	✓			
The asset manager is not engaged in the development of asset information requirements, meaning they are not effectively built into the tender documentation and contract model. This results in issues handing over the asset and effective transition into operations and maintenance.	✓			✓

[46] Procurement_-_FINAL.pdf (publishing.service.gov.uk)