Pricing principles for strategic water resource solutions

1. About this document

A working group established by RAPID, the Regulator's Alliance for Progressing Infrastructure Development, is producing a series of working papers on pricing incentives and risk. This working paper presents information on the pricing principles associated with strategic water resource solutions. This paper has been influenced by the initial thinking on the regulatory and commercial framework, set out in the June 2021 RAPID discussion document "The regulatory and commercial framework for strategic water resource solutions". Although this paper has been informed by discussions at the working group, facilitated by RAPID, it does not reflect a policy position of either RAPID or Ofwat.

The pricing principles developed in this document generally only apply to water resources sourced and supplied to water companies based on England, unless specifically referenced otherwise. For water supply options sourced from Wales, different pricing principles apply, reflecting Welsh Government legislation and policies relating to the sustainable management of natural resources. Whilst the pricing principles in general may apply for cross-border trades from Wales to England, additional criteria to demonstrate that the trade is of benefit to the people and environment of Wales would have primacy.

2. Executive summary

[redacted]

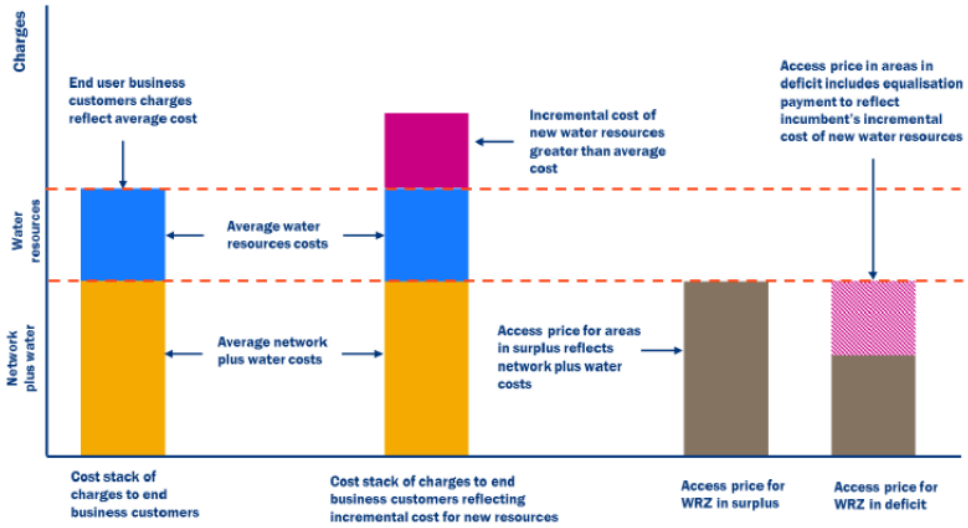
3. Why are pricing principles needed?

The RAPID vision is for resilient, timely, high-quality, environmentally beneficial water resources which are acceptable and affordable for customers. To achieve this goal, RAPID anticipate that many of the best value options to develop strategic water resources require collaboration (and then water trading) across more than one water company, often with third parties. These strategic resource options (**SRO**s), require more complex (and perhaps novel) commercial arrangements than the quality or economic regulation of resource options within one water company supply area.

We consider below pricing principles, acknowledging that some of the need for pricing principles can also be dealt with through incentives (e.g. either contractual for use or availability of a resource, or regulatory for trading. Both of these topics are considered through separate RAPID workstreams.

For smaller and simpler schemes, there are a number of existing bulk supply pricing options available:

- For "bidding in" to an existing company water resource scheme by a third party, there is an equalisation payment approach to take into account where the new entrant has a lower incremental cost of supply than the incremental incumbent's option, but this is above the incumbent average cost.



Source: *Ofwat (December 2017), 'Delivering Water 2020: Our final methodology for the 2019 price review, Appendix 5: Water resources control' https://www.ofwat.gov.uk/wp-content/uploads/2017/12/Appendix-5-Water-resources-FM.pdf*

Note: *Figure 1, page 26*

- For smaller bilateral trades between incumbents or between third parties, the costs avoided can be taken into account as a deduction off the wholesale price of the incumbent, in addition to any "bidding in" equalisation payment. This is an area that requires further development, but is outside of the scope of this paper. However, the pricing principles for SROs will affect the development of the bilateral market, in particular as the water resource and network utilisation flexibility provided by smaller and more local trades should be considered in the regional water resource planning and, informed by this, company Water Resource Management Plans.

SROs will carry different risk profiles to smaller incremental or third party schemes:

- There is complexity in the specific arrangements that may emerge. Whilst these could be addressed on a case-by-case basis, creating specific arrangements for each scheme could be time consuming, and mitigate against SROs being developed.
- Schemes are likely to develop in phases (and may have multiple components), and there may be multiple options left open at early phases of development. Regulatory scrutiny of these options (both environmental regulation, water quality regulation and economic regulation will shape how these schemes are developed, as well as their eventual operation, which is likely to see continued co-ordination and regulation of their use in practice[1]. Pricing may be one dimension that is therefore uncertain during scheme development, but where principles are required to support procurement, financing and commercial arrangements, particularly at later stages of a CAP.
- There may be multiple parts to an SRO, with different parties being paid/paying along the value chain.
- There are a range of commercial models that will allow for development of SROs. Ofwat has a specific regulatory regime for the procurement and delivery of major projects, such as

[1] RAPID have commissioned Baringa and Mott MacDonald to consider how water resource decision making might be co-ordinated to deliver the best outcomes for customers, the environment and wider supply. Therefore we do not consider in detail any impact on pricing dimensions, other than to assume that on-going regulation of existing and new water resources will exist.

strategic water resource schemes. One model that is currently used is Direct Procurement for Customers (DPC), where the major project is built, financed and operated by a competitively appointed provider (CAP). There are other possible procurement models, including amendments to DPC/CAP arrangements where more than one company is procuring new water resources, which is likely to be the case for SROs. Whatever the commercial model, pricing approaches are likely to affect the choice of commercial model and its interest to CAPs. It is possible that pricing approaches could vary depending on the stage of life cycle of developing and operating a project.

- The major schemes will require water trading between are likely to involve one or more incumbents exporting or importing water. Both the exporter and the importing should be at least able to recover their costs, and pricing will affect their incentives to trade.

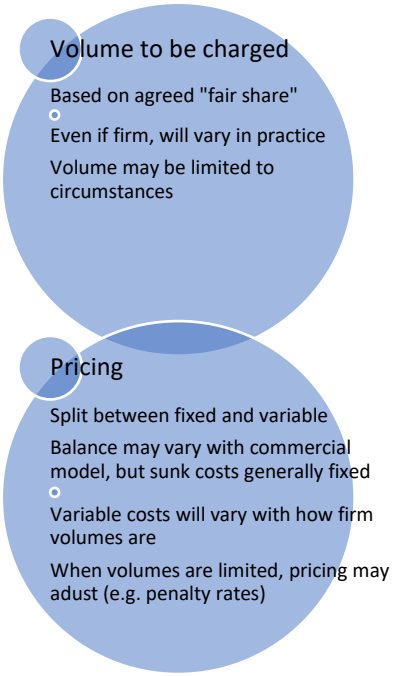
At a basic level, the key components of a pricing arrangement are (a) the volume to be charged (and how volumes are allocated to multiple exporters), (b) the rates (fixed and variable) at which that volume is charged for each exporter, and (c) any contractual expectations/limits, along with any penalty rates (or additional tariff structure) to apply when operating outside of those limits.

There are also other matters that form part of the dimensions of pricing principles specific to SROs:

- RAPID is consulting on a "fair shares approach". This means that at its simplest that for new SROs the share for each water company or third party will be defined in advance, including for drought or other operational circumstances where the total volume of water available may fall. This does not on itself requiring specific pricing dimensions or rules, as it is a non-price mechanism in combination with other pricing dimensions (such as applying fixed cost in proportion to the "fair share" being constructed, and variable operating cost based on volumes of the share available delivered, see below). Alternatives that RAPID are considering that would require pricing dimensions are:
    - Continuity of supply: If a recipient does not require the supply continuously (e.g. if only required in times of water stress when other sources had been depleted), then this would likely affect all pricing of trades.
    - Level of guarantee in supply availability: Even if rights are firm for the recipient, exporters may have differing circumstances under which supply could be restricted (which may have an impact on required investment) - unless there are non-price consequences, pricing would need to consider what would happen in circumstances these rights were not met.
- Water resource schemes can be characterised by having a high level of fixed (sunk costs), but with an element of variable cost normally linked to the volume used. At a peak drought period there may be much higher variable cost of utilising individual water resources, and across a whole network. This leads to the question of whether this should be reflected in the charging structure, or just into the costs to be recovered through a charging structure.
- Fairness, both in terms of end users and in terms of societal impacts and the environment, is a relevant criteria to both the planning and operation of water resources, and their pricing. For instance
    - Welsh government guidance states that customers of Welsh companies should get fair value for the use of water resources in Wales.
    - Water resource planning guidance aims to identify the schemes that are the best value, including a range of criteria, rather than lowest cost being the main criteria

- Defra guidance on bulk supplies states that the distribution of costs should be fair and proportionate. This includes ensuring that charges are fair to future customers as well as current customers[2].

- Confidence in the charging arrangements will be needed in advance, particularly for CAPs who are preparing submissions for water companies and Ofwat to consider. RAPID has considered that pricing should allow fixed costs to be recovered for SROs, so companies have a similar level of confidence about the recovery of efficient costs of investment as if they were developing the resource entirely for their own customers.



Although pricing principles should generally cover most of the circumstances involved in SROs, this does not completely remove the need to consider penalty clauses (compensation through settlement or dispute, or through regulatory incentives). Generally contract law does not allow for recovery of regulatory incentives that apply to one company in their contract, unless it is specific to the terms of that contract. So for instance should there be a supply interruption, this remains the responsibility of the party with that regulatory incentive, and this could not in a contract normally be recovered from any other party unless the contract specifically allowed it. The fairness of such terms (and in additional compliance with competition legislation) will depend on the circumstances. So generally pricing principles or rules can deal with most of the likely situations, but like contract penalty clauses, need to be specific to the arrangements rather than extending to wider risks and regulatory incentives that apply to the water sector.

In addition to those potential performance issues, there is also consideration needed for how water trade pricing, revenues and costs interact with incumbent company price controls.

---

2 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/696389/ofwat-guidance-water-bulk-supply-discharge-charges.pdf

4. What markets are pricing principles needed for?

In RAPID's regulatory and commercial framework discussion document, Ofwat described the market design as being an enhanced version of the current model of, which we expand on further below:

- regional identification of needs, with national scrutiny that it major schemes are contributing to the national infrastructure needs.
- Water companies and others (in and out of the region) put forward solutions with a range of timeframes (often long lead times)
- Regional selection of the best value outcomes
- Individual companies reflect in their own plans, alongside other more local water resource supply and demand options
- Third party water resource suppliers bid in against company plans, and other water market activity (e.g. by business customer retailers, new appointments and variations etc) also respond to local and customer specific needs and requirements.

As these arrangements are expected to continue, this rules out the likelihood of commodity market competition and pricing, such as seen for the energy market. The energy market includes trading that ultimately sets a price for energy (including through contracts over a number of timeframes) that retailers and major users can participate in. One or more systems operator co-ordinate supplies, as well as bids being provided for the provision of capacity for the systems operator to call on and utilise.

We therefore assume that regulatory pricing principles that can be applied in practice to a range of SRO schemes are needed, rather than being able to rely on market mechanisms /systems to reveal prices. These pricing principles may need to differ between different stages / parts of an SRO scheme. These pricing principles should support standardisation of contracts, in order to provide confidence in trading arrangements to water companies, investors in major schemes, and third parties involved in water resources and water trading.

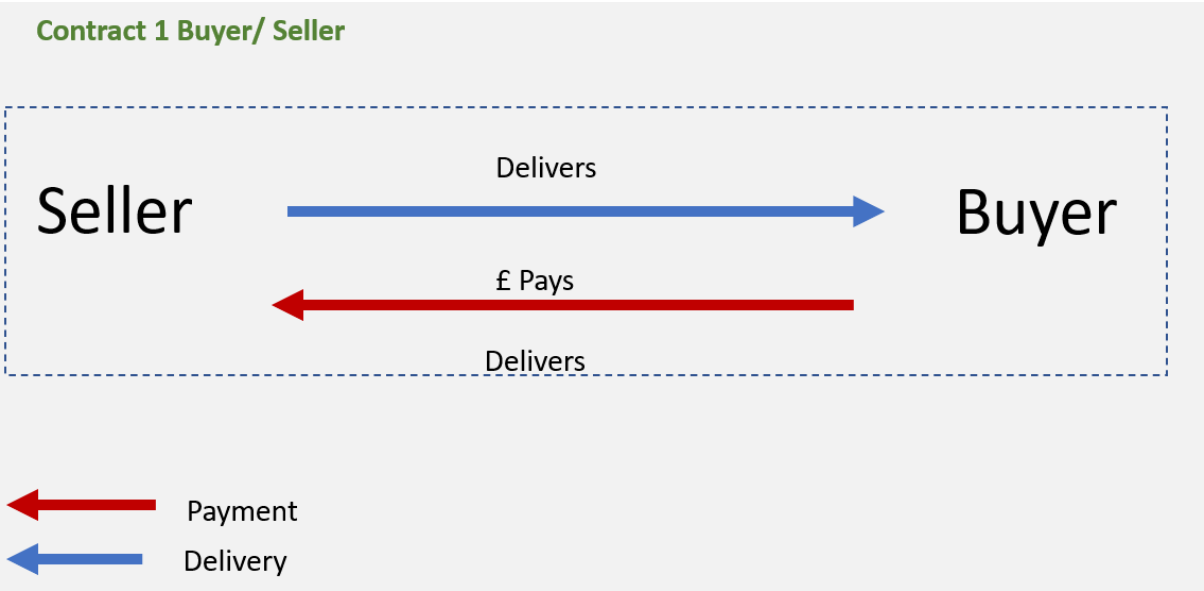
We also need to consider whether a single set of pricing principles is required irrespective of the commercial model, or whether these should vary by commercial model or stage of its development. One question is what flexibility should be available to negotiate the final pricing approach within individual contracts, or whether the pricing approach should be established more firmly in separate guidance, for contractual arrangements to comply with?

Financing model dimensions (from ***Financing Multi-Sector Water Supply Assets, FTI Consulting, 2015***

Single Water Company	A single statutory water company finances, builds and operates the MSWSA as part of its normal activities, using a standard corporate finance approach
Multi-Sector Joint Ventures	A group of water users e.g. farmers, supermarkets, power companies invest alongside the statutory water company through a Joint Venture arrangement to finance, build and operate the MSWSA
Special Purpose Vehicle	An independent SPV is established to finance, build and operate the MSWSA project using Project Finance. Ownership of the SPV could be opened up to a range of different investors.
Regulated / Unregulated Split	The MSWSA is split into two separate projects, one financed by a statutory water company for PWS purposes, and the other financed by other parties for both non-PWS and PWS purposes. Financing would be through a mixture of corporate and JV finance.
Pre/Post Construction Split	The project could be split temporarily. For example, a statutory water company could undertake the preparatory work, before other parties undertake the construction. Financing would be through a mixture of corporate and project finance.
Statutory Water Company Joint Venture	Two or more statutory water companies could form a JV to finance the MSWSA.
Water Company Shareholder Joint Venture	The parent companies or two or more statutory water companies could form a JV to finance the MSWSA separately from the regulated statutory water companies.

Pricing for commercial models

The simplest form potential pricing models is a bilateral contract.



This model will generally work best for an existing trade, or a trade which involves utilisation of existing resources where changes in use are unlikely to impact on future investment decisions. There

may be less certainty for the buyer, where they are aware of risk of the supply being available from the seller. It generally focuses on **observable** costs, and not take the context into account. This means that drought, degree of commitment, credit, payment schedules, drivers of operating costs etc. may not be reflected in pricing to avoid increasing transaction costs.

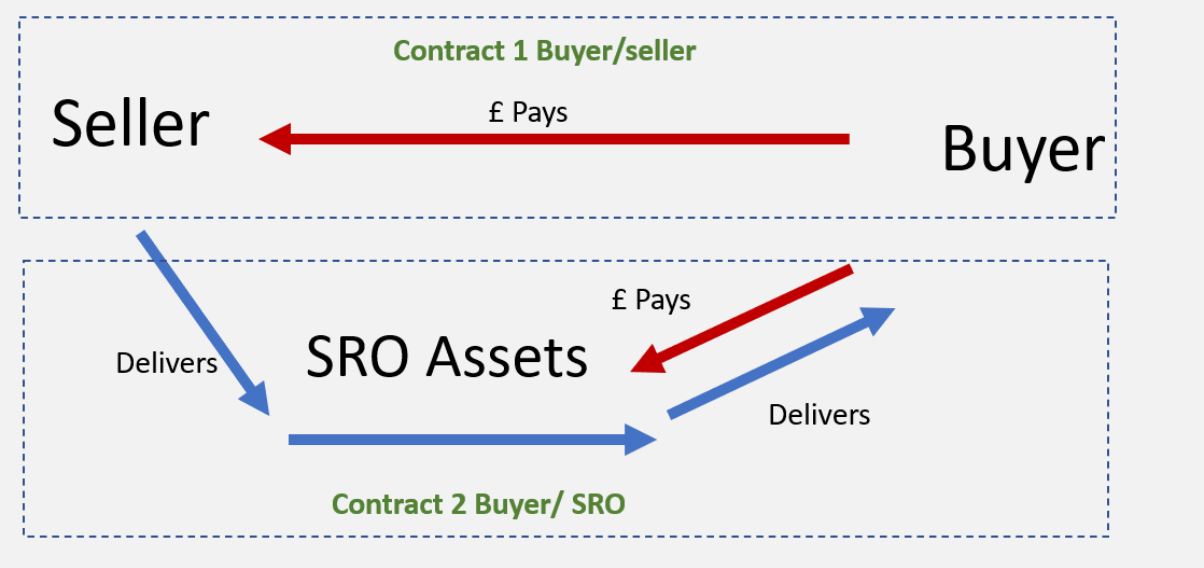
This may be an average wholesale price, minus observable costs (e.g. local distribution) - NAV pricing guidance provides detailed principles for bulk trades to NAVs, although these seem likely to be unsuitable bulk trades. Where the buyer was also inputting a water supply (e.g. a third party bidding in to the seller water resource management to enable this transaction), equalisation payments to reflect the difference between the incremental and average cost of the seller's water resources would also be reflected in the bulk supply price.

Some costs that are not observable, may need to be more observable as trades happen, for instance the cost of optimising supplies / utilisation patterns. It is possible to assume that these costs may be positive, negative or neutral to the seller because the act of trading reveals more use of efficiency opportunities in water resources, compared to running an isolated territorial monopoly supply system (ie dynamic efficiencies emerge as a benefit of trades).

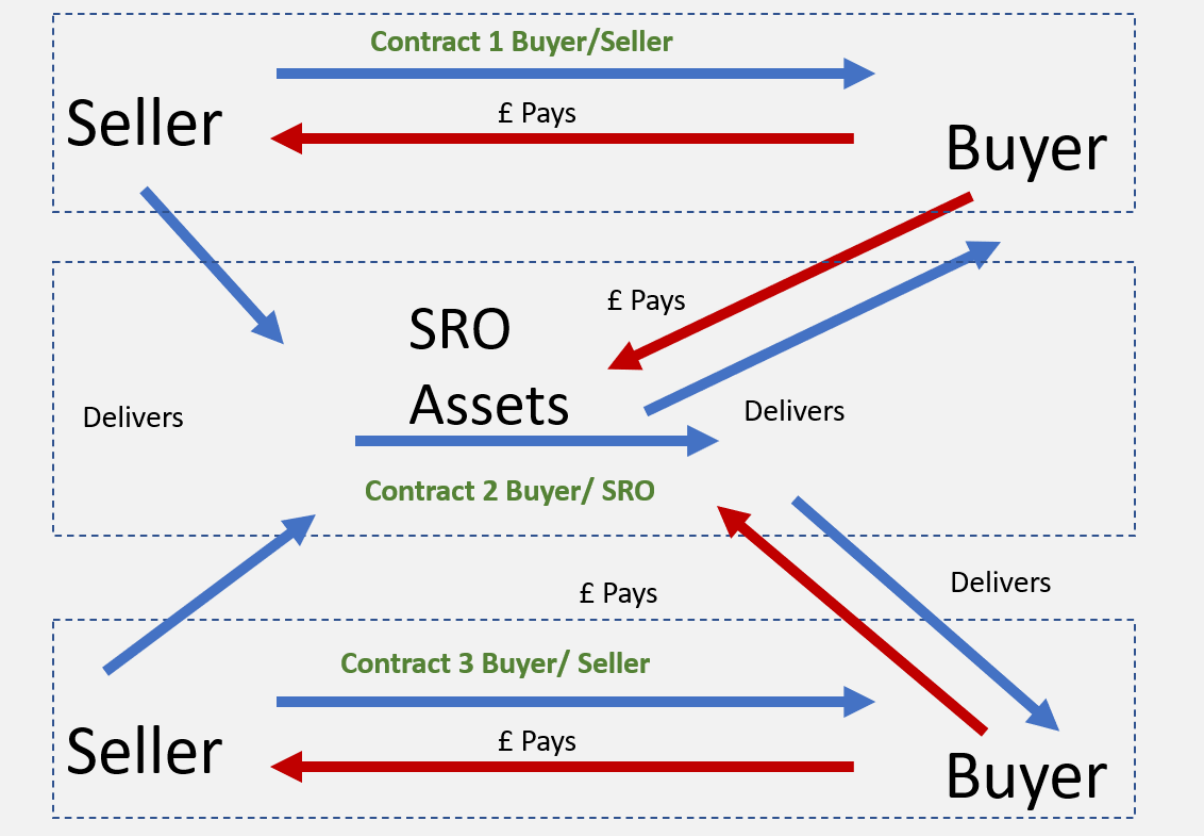
Pricing options for this type of bulk supply are summarised below:

Model and addition	Solution to what problem	Where could it be effective	Known faults	Example
Bulk supply tariff	Solves commitment problem by negotiating volume (mostly)	Provides a stable price Well understood by contracting parties and investors	Not flexible Will reflect market power of buyer or seller Locks in charging methodology	UK Electricity CEGB contract to 1989
Addition one Take or pay contract	Solves commitment problem, provides stable revenue for seller	Allocation of seasonal storage, contracted volumes of water where there are two or more buyers/ suppliers	Will reflect market power of buyer or seller Locks in charging methodology	Radio spectrum, former Grid SO function, EU capacity markets, offshore transmission
Addition two Take or pay with destination clauses	Solves system operation issues	In cases where assets are shared defines capacity requirement	Will prevent resale/ secondary markets	Gas contracts USSR/ West Germany

Once an SRO is introduced, e.g. through Direct Procurement for Customers, this moves beyond a bilateral trade model as the water supply becomes contingent on an asset being built. This may involve transaction through a seller, but as we move to construction on behalf of a buyer, it is possible to split payments into a transaction of the water resource, and the transaction for the assets that deliver them. At its simplest, this could see the SRO asset transaction as a fixed/sunk cost and the buyer/seller payment as a variable amount as the water is used.



As we develop towards multiple buyers and sellers, this model transitions further – there may be two distinct pricing principles and commercial arrangements, each of which may need to evolve over the life cycle of a water supply arrangement developing



In these circumstances, there are two primary relationships for pricing purposes:

- Buyer to seller – the buyer pays the seller for making capacity available (fixed price) and putting the appropriate volume of water into supply (variable price)
- Buyer to SRO asset – the buyer pays the owner of the SRO assets for the utilisation of its assets to transport the water from the seller to the buyer's network.

There are a few issues here which impinge on the factors being considers by other RAPID groups, for example:

- Co-ordinated operations – i.e. the means by which the volumes required by the buyer(s) are converted into required inputs from the sellers, and form the basis of remuneration of the sellers.
- Commercial model – the above assumes that the buyer(s) have separate contracts for each separate part of the value chain. Other commercial models are available, such as the SRO asset owner buying the water from the sellers and selling on (via a bundled price) to the buyer(s).

Pricing options for SROs where you have

Model	Solution to what problem	Where could it be effective	Known faults	Example
Rental Agreement	Running of the asset in practice. Extensive case law covering many eventualities	In cases where the parties use a third party to build the asset but want to have some control of everyday operations	Sets up incentive structure to think about the value of the asset to the owner, not necessarily best social welfare outcome	Some CCGT power station equipment
Take or pay	Solves the commitment problem	Good for single buyer and seller where the seller pays for the asset	Will exclude any third parties using the service. Low usage may be an issue?	European gas before liberalisation
Price control (BAU)	Solves transaction, transition costs, certainty. Could easily be adapted to contract (similar to bio resources issues?)	Could be useful to solve uncertainty of revenue issues associated with infrequently utilised assets	Will never fully replicate the market outcome. Has been criticised from all sides too generous (consumers)/ hard (regulated), too complex?	All UK's energy monopoly networks, Airports, railways…
Negotiated contracts under a reg framework	Solves commercial issues between parties	Useful in cases where there a numerous projects	Limited shelf life in dynamic markets/ overtaken by events	Arrangements of bulk supply tariff Electricity, water

In summary, the models set out above seem to imply the following:

- Buyer to seller:
    - The fixed price should cover supply availability – i.e. to enable sellers to recover the capital cost of making the supply available for the use of the buyer. The degree of capital required likely will depend on the level of guarantee that the seller provides for making the supply available (i.e. the circumstances under which the seller would restrict availability of the supply).
    - The variable price would therefore only recover the marginal cost of water supply, depending on utilisation by the buyer.

    - This also implies that if the buyer sought to make use of the supply, outside of stated parameters in the contract (e.g. over utilisation) then this may require (a) a step increase in the volumetric, above agreed limits, and/or (b) appropriate penalty clauses within the contract.
- Buyer to SRO asset – the buyer pays the owner of the SRO assets for the utilisation of its assets to transport the water from the seller to the buyer's network.
    - Pricing would seem likely to be similar to the above, albeit the weighting towards fixed prices would likely be greater – indeed there may be no variable charges if (say) the interconnector is entirely passive, operating under gravity.

5. What are the dimensions that affect pricing principles?

There are many dimensions to potential trades, although it may be that these have only simple interactions with pricing – for example, the following may only influence the costs to be recovered from the trade price:

- Robust prices for water sources (are they different for export?) – including consideration of whether it is necessary to take a separate pricing approach for effluent re-use schemes (as effluent is not a "raw water" resource).
- Transportation costs for water transiting between networks
- Storage charges
- Treatment costs (for potable water trades)
- Recovery of related asset investment (e.g. enabling works or alternative supplies that are not directly used in a trade)

It may be that some of these may have more complex impacts elsewhere, such as on the regulatory regime (e.g. effluent re-use, where there may be more complex considerations around price control allocation and transfer pricing).

Similarly, water trading incentives may just act as an additional fixed cost to recover from the trade price.

Other factors may, if utilised, create additional charging components:

- Resale charges (if stored by multiple companies)
- Option or availability charges

As noted above, it is also important to establish how firm any pricing guidance should be, and wat flexibility should be allowed within contract negotiations. However, we note that firmer guidance would tend to help support the need for comparability between different schemes, to ensure that any options pursued represent best value.

General pricing principles, including Third-party access to infrastructure on non-discriminatory terms, would be within the scope of pricing guidance. This is in addition to the general requirement (which such pricing principles or guidance cannot overrule) that the pricing arrangements are consistent with relevant competition legislation, or water sector specific supply requirements, principally in the Water Industry Act.

Consistency between other parts of regulatory pricing – bulk trade pricing is utilised in many other areas (NAV's, existing bulk trades between incumbents and with third parties, large wholesale customers, etc.), so important to justify consistency across those other areas.

- The legislative frameworks – and whether the party involved is a monopoly and acting within an appointee ring fence (e.g. regulation of bulk supplies between incumbents vs with/between third parties). This includes wider competition frameworks / legislative requirements

DEFRA guidance on bulk supply pricing

- The duties and motivations of the relevant regulators and competition authorities – particularly with regards to how consumers directly or indirectly benefit. This will include both duties and related Government guidance (e.g. Defra Strategic Policy Statement and bulk supply guidance).

Use of liquidated damage principles as an alternative to ex ante pricing rules.

- One dimension is how repeatable/applicable the pricing arrangement is across bulk supplies, given the need for speed and certainty. Illustrating how this may work in practice (against the range of transfers involved across several AMPs for regional water resource planning groups would be valuable.

<u>Issues for exporters</u>

- Exporter's customers should only pay the fixed cost that they receive from new capacity
- The customers should be protected by the principle that actual volumetric costs apply, and the company protected for its efficient costs similarly.
- Ofwat will need to assess efficiency, which should be concomitant with the pricing approach
    - For fixed costs this would be scheme specific
    - For variable costs, this could be part of normal regulatory efficiency assessment of base and maintenance costs.
    - This may depend on any evidence that fixed (scheme) efficiency costs and operating costs are correlated. A combined assessment is probably appropriate to avoid trade offs in the design, although this does not affect the impact on pricing.

<u>Issues for importers</u>

- The importer should be able to recover their costs, at least.
- The cost of the next best value alternative water resource (or demand management) scheme. However, if the best value is a lower, rather than higher cost, either
    - The reasons why a lower cost scheme (e.g. environmental costs) would need to be monetised or
    - The scheme cost is capped

<u>Dimensions that may not be relevant</u>

- Environmental and water quality requirements – although for raw water supplies, there may be a requirement for operating parameter limits to be set (and for penalty pricing to apply for operation outside of those limits)

Considerations for variable pricing

- How short term or long term is variable pricing? This depends on the degree to which it can be observable. In practice may need to be set ex-ante, unless it can be a share of actual operating cost in a separate "pot".

6. How do these dimensions affect strategic water resource solutions?

Consider charging methodologies:

- Charging at marginal cost would in theory be the first best solution. However, when fixed costs are large, a marginal approach will create prices that are below average cost leading to the failure of the commercial model.
- The charging issue is to determine how much extra to charge above marginal cost to cover fixed costs.
    - Choice of selecting a suitable methodology principles (Charles Bonbright)
    - Design choices
        - Marginal cost pricing (Hotelling)
        - Deviations from marginal cost (Ramsey–Boiteux pricing). One, two, or more part pricing
        - Nodal pricing (adjusted to capture all investment costs)
        - Cost structures suitable for solutions
- Appropriateness of market arrangements to the likely volumes and investment costs

What to consider when thinking about design choices for commercial arrangements

- Transaction costs including trust and enforceability
- Limitations of market solutions under certain conditions for example, buyer or seller market power
- Differ in terms of their effectiveness as a price discovery mechanism under dynamic or static cost conditions
- Dynamic relationship between price and cost
- Flexibility and resilience to changes in the commercial environment
- Design helped by knowing exactly what the product is (standardisation)
- Most effective procurement may not be the most effective total welfare solution

Further regulatory considerations

- Consumer interests are at both sides of the deal i.e. consumers not only benefit from water supply but those on the selling region stand to benefit from enhanced infrastructure and a share of any profit made from water trades
- In its current state it will be difficult to reconcile potentially competing interests of multiple buyers/ sellers. Each will have a different incentive derived from their relative surplus or requirement for water.
- The application of market power (monopsony or monopoly) in the commercial aspects/ design of the project. This cannot easily be reversed if it is subtly exercised within the contract negotiation/ planning phases.
- Potentially, there are incentives of the JV *itself* as a profit maximising organisation
- Possibility of *increased transaction and coordination costs* between parties between options
- Complex *liability chains* may be created
- *Coordination issues* between parties is potentially the biggest issue

Price vs Cost

- Whatever model(s) is finally chosen there are a number of factors to consider
- Price controls are focused on identifying costs, applying/ adjusting efficiency factors to an amount of revenue
- However when significant non directly observable costs such as risk this thinking breaks down
- This is due to the interplay of expectations about supply and demand conditions leads to volatility in the short term (e.g. short term problems in delivery, over production or seasonally e.g. summer winter)
- NOTE Profitability/ market power index (Lerner index) $\frac{\text{Price- Marginal Cost}}{\text{Price}}$

  0= perfectly competitive to 1= pure monopoly
- This is index has been used by regulators as an indicator of market power

- Priority purposes for pricing - cost recovery / cost reflectivity vs. economic pricing / commerciality (which may not guarantee cost recovery and/or lead to excess profits).
- Level of specificity in pricing guidance – broad guidance / rules (e.g. LRAIC) vs. more detailed structural guidance (per NAV bulk pricing)
- What sets overall level of pricing – balance to price controls vs. cost plus adjusted WACC vs. commercial negotiation vs market observations. We assume this market is not going to be "liquid" enough given monopoly/monopsony power to rely on the market to reveal price.
- Structure of prices:
    - should guidance indicate what structure of price should be adopted for different commercial models and/or different operational requirements (e.g. intermittent vs. continuous supplies)?
    - Component vs overall pricing
    - What is the taxonomy of operational circumstances – continuity/intermittency of supply, quality of supply, firmness of commitment.
    - What is the taxonomy of commercial models.
- Guidance to apply at different points of pricing – e.g. regulatory guidance on structure but commercial negotiation on pricing level.
    - As a set of principles:
        - They can directly set as part of a regulatory price control / decision
        - There can be pricing rules.

        - These may be a close proxy for a price control – e.g. a set of rules for allowed revenue and an obvious approach of how this is applied (e.g. fixed recovery, volumetric, or a combination).
        - They may be principles that are generic (e.g. cost reflectivity), including any reference points that are relevant (bulk supply "wholesale minus")
        - The principles can also include allowances for profit and risk (example being a higher WACC assumed for NAVs in bulk supplies, or a lower WACC for Havant Thicket controls) – the principle that risk can vary with contracts or different parts of the value chain may or may not be relevant to pricing rules.
        - Rules may apply to the overall level, or how reference prices for component parts should be calculated or deduced.
    - They can be the outcome of an active market, or series of markets
        - This can be split between availability (fixed – e.g. equivalent of contract for Difference, value of providing agreed capacity)
        - Usage (although some usage may be fixed e.g. pipe sweetening)
        - Best value involves optimising not only the schemes, but the flexibility of circumstances that allow the water to be used.
- Managing changes in supply requirements – should prices be open vs. bounded (i.e. with penalties for supply usage falling outside of stated parameters). E.g. if a supply he is set up and priced as an intermittent supply is used more than expectations built into price (or is later required to be a continuous supply), is it reasonable to penalty rates, or contract termination/renegotiation?
    - Issues of rights to use may influence the design of the pricing of an assumed cost structure (e.g. degree of utilisation / spare capacity / how resources are shared in practice) – it is a separate question as to whether to reflect this in pricing in practice (or just leave it as a right/fixed assumption).
- Impact on comparing options – best value vs. least cost, in comparing prices for supplies with different operational characteristics (supply continuity, firmness etc.)

Table to conclude pricing dimensions (note there are many other alternatives – these are the priority ones – the ones at the end are not mutually exclusive)

	Assume SRO procurement entity (irrespective of form) e.g. CAP, JV etc)				**Additional pricing issues not mutually exclusive to SRO procurement route.**	
Exporting entity / source of water	**Single incumbent water company**	**Single incumbent water company**	**Multiple water companies**	**Multiple sources**	**Existing spare water**	**Single incumbent water company**
Importing entity / destination	**Single incumbent water company**	**Multiple incumbent water company**	**Multiple water companies**	**Multiple water companies**	**Interconnection**	**Existing bulk supply**
Pricing for new water resources (1)	Fixed regulated. Variable regulated options	Fixed regulated. Variable regulated options	Fixed regulated. Variable regulated options	Fixed regulated. Variable regulated options	Variable (wholesale minus) for water. Interconnection based on fair shares (fixed) (2)	Variable cost change in existing bulk supply (wholesale minus)
Transportation between networks	As per (2)					
Storage charges	As (1),. Potentially (2)					
Third party access basis	Bidding in	Bidding in	Fair share	Fair share	Existing (regulated access for bidding in)	Competition Act (equivalent basis terms)
Impact on water trading incentives - exporter	Simple	Simple	Need to be shared	Trading incentives should not only be available to water companies	May not be needed as cost largely fixed	May not be needed as cost largely fixed
Impact on water trading incentives - importer	Simple	Need to be shared – based on share of costs	Need to be shared	Need to be shared	Not needed	Not needed
Impact on existing trades	None	None	Yes	Yes	Yes	Yes, but should not affect pricing
Risk of stranded assets	No	No	No	Potentially for third parties	Potentially	No

	Assume SRO procurement entity (irrespective of form) e.g. CAP, JV etc)				**Additional pricing issues not mutually exclusive to SRO procurement route.**	
Comparability across schemes (for best value)	Would not affect pricing	Would not affect pricing	Would not affect pricing	Could affect pricing with equalisation payment	Could affect pricing if utilisation changes	Could affect pricing - incentives on existing bulk supply use
Stability of charges	Yes	Yes	Yes	Yes	May be an issue	May be an issue
Comparability with existing pricing rules	Yes	Yes	Yes	Possibly not (equalisation)	No	If set on wholesale minus (e.g. NAVs)
Need for regulated penalties	No	No	No	No	No	No
Need tor contractual penalties	No	Possibly	Possibly	Possibly	No	No
Environment requirements	No	No	No	Possibly	No	No
Water Quality requirements	No	No	No	No	No	No
Specificity of pricing rules (Regulated access, firm rules, principles based, case by case)	Regulated, principles	Regulated, principles	Regulated, principles	Regulated, principles or case by case	Firm rules or case-by-case	Regulated, principles or case by case
For principles – how are they set (regulatory price control / decision, price as proxy for price control, generic rules / reference points	Fixed cost determined Variable cost reference points or decision	Fixed cost determined Variable cost reference points or decision	Fixed cost determined Variable cost reference points or decision	Fixed cost determined Variable cost reference points or decision	Price control for large interconnections, otherwise generic rules	Decisions (existing statutory provisions)
Allowance for risk and profit	As per price review or commercial bid	Commercial bid	Commercial bid	Commercial bid	As per price review	As per price review

	Assume SRO procurement entity (irrespective of form) e.g. CAP, JV etc)				**Additional pricing issues not mutually exclusive to SRO procurement route.**	
Set at overall or component level?	Fixed overall, Variable component	Fixed overall, Variable component	Fixed overall, Variable component	Fixed overall, Variable component	Overall	Overall
How variations in shares are reflected	Fixed cost share or determined	Fixed cost share or determined	Fixed cost share or determined	Fixed cost share or contractual penalties	Variable cost share	N/A
How variations in volumes are reflected	Variable cost share	Variable cost share	Variable cost share	Contractual	Variable cost share	N/A
How variations in quality are reflected	N/A	N/A	N/A	Contractual	N/A	N/A
Take or pay could apply	Yes	Yes	Yes	Yes	No	No

7. Comments on NERA recommendations

In its report for RAPID (Review of Bulk Supply Contracts and Pricing in the English & Welsh Water Sector), NERA set out that pricing for new water resources bulk supply contracts should reflect the expected long-run average incremental cost (LRAIC) of supplying the contracted volumes, plus a mark-up. The mark-up should reflect a proportion of the economic rent associated with the trade, defined by the difference between the costs incurred by the seller to supply the contracted volumes of water, and the costs avoided by the buyer from not having to develop a more expensive resource.

Our assessment of NERA's conclusions are that:

- In the case of SROs through a CAP, economic rent / mark up will be determined as part of the process
- For smaller schemes, the economic rent/mark up will be inherent within
    - Ofwat wider price control assumptions
    - Ofwat incentives for water trade development
- LRAIC depends on defining the increment. For water resource schemes selected through best value rather than least cost, it may not yield useful pricing information for specific SROs
- LRAIC will also only deal with situations where there are increments of an equivalent circumstance – where treated water, distribution or interconnections, or differences in price from location, the concept may be too high level to be useful. Another way of describing this, the market may not be liquid enough to operate a LRAIC based pricing framework.

8. **What trade offs have we identified?**

- Can one set of principles apply to all these circumstances?
- Review of these dimension is needed, to identify options / alternatives, and to assess pros and cons. Are there any priority areas to be considered / deprioritised?
- Highlight any assumptions interactions with other priority areas (commercial model and incentives)
- What are the trade-offs in dimensions that options may need to be considered against:
    - Complexity of contract arrangements
    - Overall cost / best value [there is a separate question how to trade off cost and value]
    - Firmness of price and contract terms - Financeability against competitive market risk (sunk cost recovery vs seeking best value through bidding in).
    - There is a best option value in have a portfolio of schemes (major and smaller infrastructure), as well as proving in practice which models work in which situations (innovation, learning value etc).
- All pricing dimensions and arrangements should be consistent with relevant competition legislation and policy. This can cover both pricing, how arrangements are made, monitored and regulated and other dimensions of monopoly/monopsony power.

<u>Prioritisation</u>

- Can be left to individual companies / to be resolved?
- List which these are for resolution through contracts vs. which should be the subject of rules or guidance.

9. **Conclusion: What are the most important pricing factors affecting strategic water resource solutions?**

We have set out above a series of dimensions that may vary between different commercial models for developing strategic water resource schemes. Generally we find that pricing issues do not determine what these commercial models should be, and if applied as principles should not affect the development of water resource schemes.

However, RAPID & Ofwat will need to consider the dimensions. In general we think this can happen during the gated process for developing these schemes. The exception to this is for interconnections, and where existing bulk supplies are required. In these cases contractual negotiation of the terms between companies would be required as separate components of the value chain, and to reflect that existing arrangements are already in place. Separate pricing principles to govern interconnections and existing bulk supplies will need to be developed.

The most important factors to consider in developing the pricing arrangements for an individual SRO are:

- The degree to which the CAP costs will be sunk once the SRO is in operation, and therefore can be fixed
- Whether the water resource beneficiary (“buyer(s)”) makes payments for fixed costs direct to the CAP, or through the water resource owner (“seller(s)”).
- The degree to which variable costs can be observed will affect the type of pricing mechanisms – whether these are split based on volumes / shares (if observable), or set with

reference to an averaged regulated price (e.g. wholesale minus, or determined efficient adjustment) if not observable.

The other questions on pricing principle, such as whether pricing should be negotiated and set out in contractual terms or determined ex ante by Ofwat as part of the specific arrangements (either standardised, determined for a specific case or based on principles) will vary beneath the principle questions set out above. The same applies to incentives, both on sellers to minimise costs, sellers and buyers to optimise use of water in line with the arrangements, and regulatory incentives for water trading more generally.

Even if it is concluded that pricing principles should be more fully determined ex ante, it may be helpful (or even necessary) to see how these dimensions play out within the current round of SROs, to ensure that any subsequent guidance is built upon practical experience of the contracts that it is intended to apply to.