**Working hypothesis for commercial model**

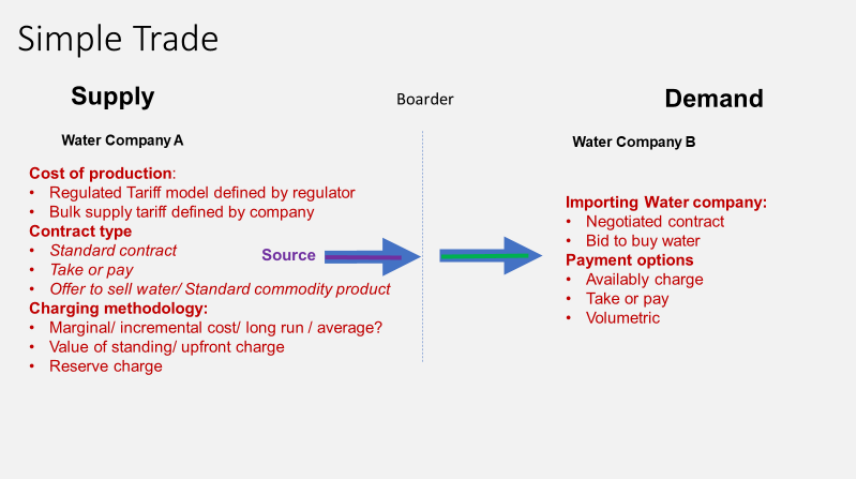
**Six challenging issues**

- *Up until now trading has mainly involved two and not multiple regulated or third parties*
- *Water production is under price control and so is the asset building but not necessarily the same degree of prescription for agreements between companies themselves*
- *For some SROs there may be requirements for transit charges or capacity allocations for interconnectors. Reservoirs may also require bundled capacity and commodity products if there are three separate companies involved*
- *The projects vary in size and scope for commercial arrangements*
- *The projects have a symmetrical incentives/ commitment issues between parties*
- *Stepped fixed costs/ capacity could mean asset underutilisation*
- *The assets are likely to be built considering public value and the wider environmental impact such as CO2 and sustainability criteria*
- *Finally, we will have to reconcile market models with procurement options*

**Model 1**

Traditional model has some variants. The Bulk Supply Tariff model could be regulated or set by the firm. This could be in the form of a standard contract, a take or pay contract, an offer to sell water at a known volume and delivery time. The charging methodology is within the standard debate- marginal vs incremental costs, averaged etc. There could also be a reservation charge to avoid any commitment issues.

The buyer might want a regulated or negotiated contract or place a bid at a known volume and delivery time. They might also want to pay a volumetric or availability charge within a take or pay arrangement.



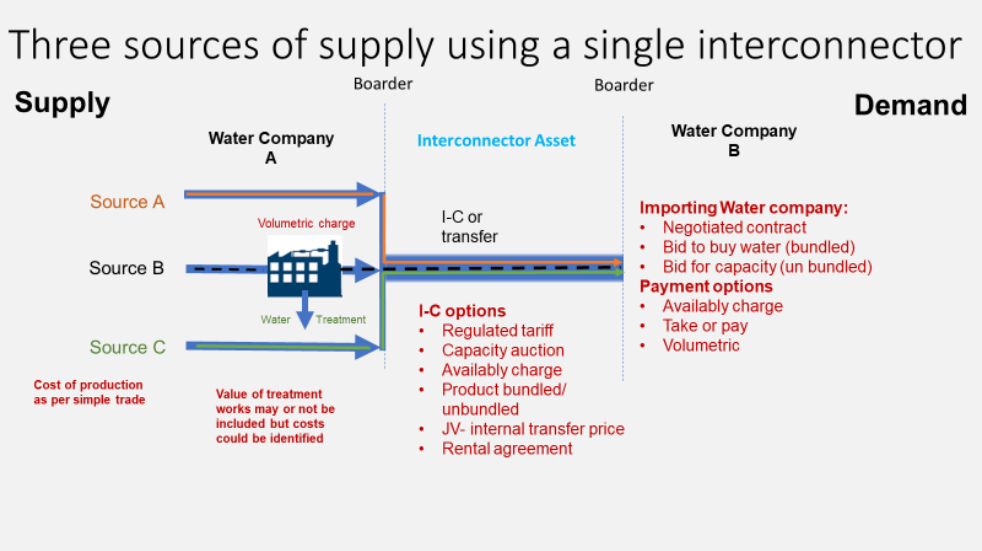

**Model 2**

The major difference from model one is related to the numbers of parties involved in the transaction. For water sources the options used to calculate price in model 1 can be replicated but must be consistent to allow price comparison. In a case of a single interconnector/ transfer where the title of the water is not be contested water the capacity of the interconnector may become an issue. This could be solved by setting a regulatory tariff for interconnector or by setting a capacity auction. This can be in the form of a bundled or unbundled product (by volume, date). If a third party owns the asset there could be a rental agreement. If there is joint ownership in the form of a JV an internal transfer charge still must be agreed.

**Working hypothesis for commercial model**

The options for the buyer are identical model one but they may prefer bundled/ unbundled capacity. There may also be subject to take or pay, availability charge or straight volumetric price.

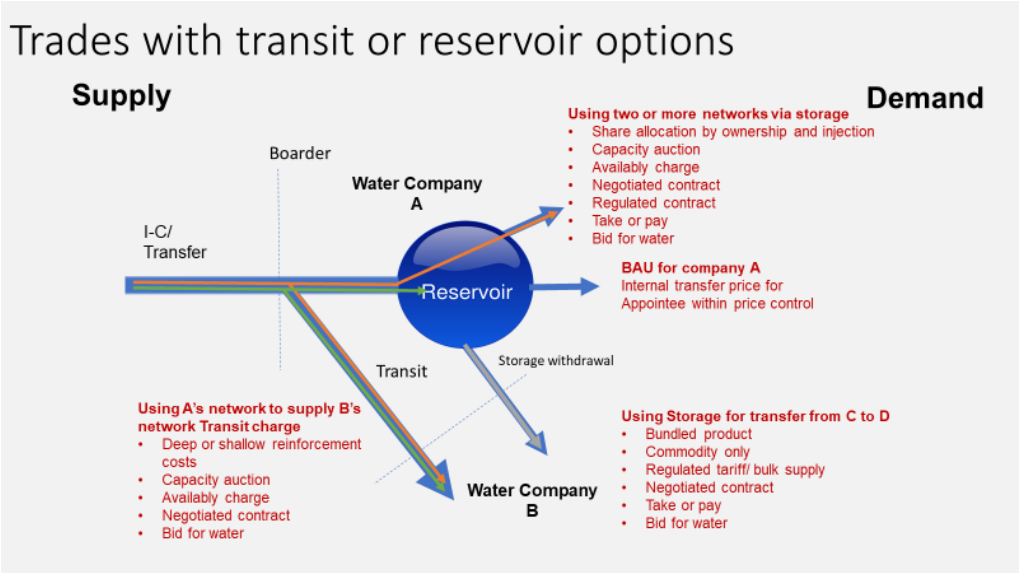
There may also be an issue for sources that may treat any water that gets pumped into the interconnector if other sources are untreated.




**Model 3**

The most complex scenario is where water from a transfer has multiple destinations including storage. If a transit network can identify extra costs associated with trading water, there is a case for re enforcement charges that can be shallow or deep depending on the type of connection to their network.

If a reservoir is used for storing water, then capacity can be allocated by ownership, a volumetric charge, take or pay contract, bid for water (time and volume, standard contract). Again, the products could be bundled or unbundled, regulated or unregulated.




**Elements in the models compared**

## Working hypothesis for commercial model

Each of the elements suggested in the three models can solve some problems and are indeed currently being used in the energy and telecom markets. They however also have known faults/ limitations. Table 1 compares these elements and provides real world examples of their use.

| Model | Solution to what problem | Where could it be effective | Known faults | Example |
|---|---|---|---|---|
| Traded Market | Valuation of supply and command conditions able to provide real time signals. | Allocation of storage where there are multiple parties buying and supplying water | Can lead to excessive volatility | Commodity markets- tin, electricity, wheat |
| Auctions | Solves frequency issue as auction dates can be set at a time scale to suit the asset e.g. seasonal or annual | Allocation of seasonal storage, contracted volumes of water where there are two or more buyers/ suppliers | Will reflect market power of buyer or seller | Radio spectrum, former Grid SO function, EU capacity markets, offshore transmission |
| Joint venture | Reduces exercise of market power, transaction costs, risk and control | Where there is a single asset with multiple owners | Complexity of agreement, coordination issues | TTT, Ownership model of RECs/ National Grid |
| 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 and problems | Good for single buyer and seller where the seller pays for the asset | Will exclude any third parties using the service | European gas before liberalisation |
| **Price control (BAU)** | **Solves transaction, transition costs and certainty** | **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…** |
| Direction/ incentives | Solves financing and can be flexible with projects | Wide scope for applications | Limited shelf life in dynamic markets | Renewable energy, energy storage |
| Negotiated contracts under regulation | 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 |

### Conclusion

There are at least eight models available for the commercial agreements and these can be effectively used for specific types of agreements. The critical issue if the contracting is more than a bi lateral contract between two regulated water companies. Anything involving multiple regulated or third parties will involve significant step change from our traditional understanding of water trading.