



# **Changing Course: Establishing competition through water trading**

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# Wide ranging benefits from market forces could be achieved using a model for water trading

We consider the benefits of water trading to be broad ranging. As stated in our Changing Course document: *“Our analysis suggests that the greatest benefits from increased competition will be in the better allocation of water resources”*

## 1. good for environment

- If we treated UK in one WRMP, and had an incentive to rebalance abstractions, we would come up with many more interconnections than we currently have
- first step towards revealing the true value of water
- Move towards creating balance between different type of users of water (Domestic, Industry, Agriculture, Environment)

## 2. good for customers

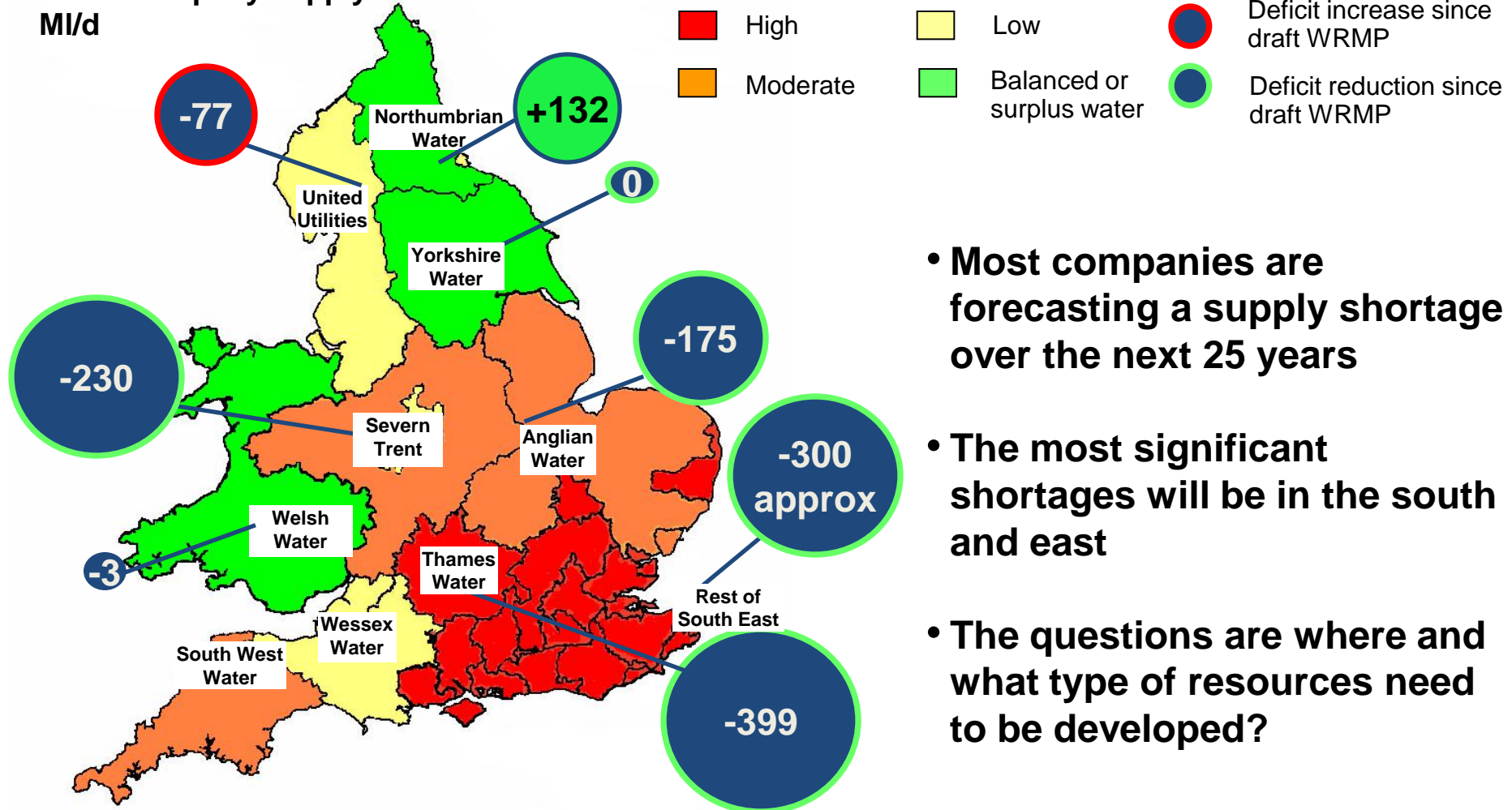
- improved resilience and long term sustainability benefits
- bill reductions relatively modest

## It would also be good for water market development

- is an area where some form of competition can develop with low risk for incumbents and customers, with limited impact on existing RCV (the biggest risk in market reform)
- clear opportunity for new entrants for new resources

# Water trading could play an important role in balancing supply and demand for water as demand for water increases in areas of greatest scarcity

Water company supply/demand deficit in 2035 based on current resources  
MI/d



- Most companies are forecasting a supply shortage over the next 25 years
- The most significant shortages will be in the south and east
- The questions are where and what type of resources need to be developed?

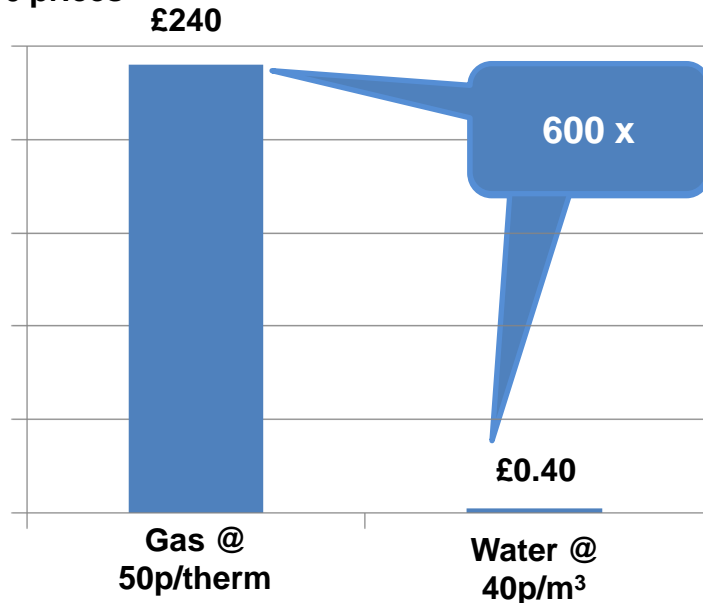
Source: Current published water resource management plans; Environment Agency; Project team analysis

A proportion of the deficit will be met by providing increased treatment capacity for existing abstraction licences, demand management or leakage reduction. The remainder would require new or increased abstraction licences.

# But compared to gas, water is a low cost resource, and hence remains relatively expensive to move around – these underlying economics will shape water trading

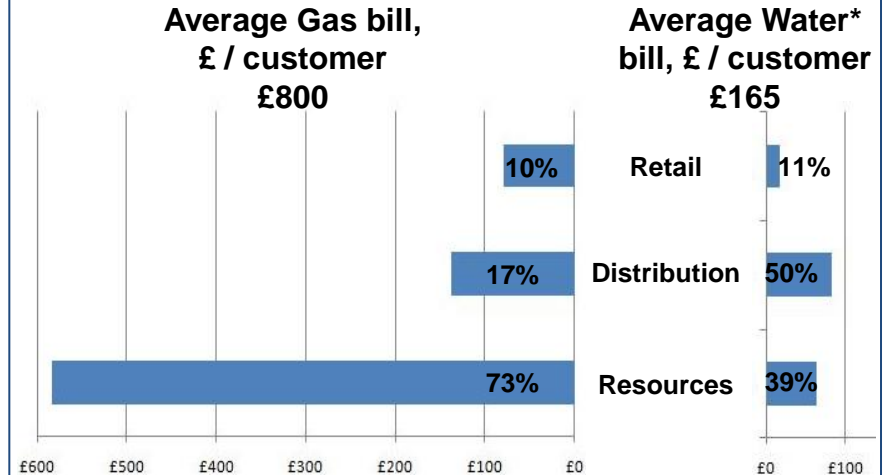
## Water is far less economic to move around a grid than gas

Cost per ton  
2010 prices



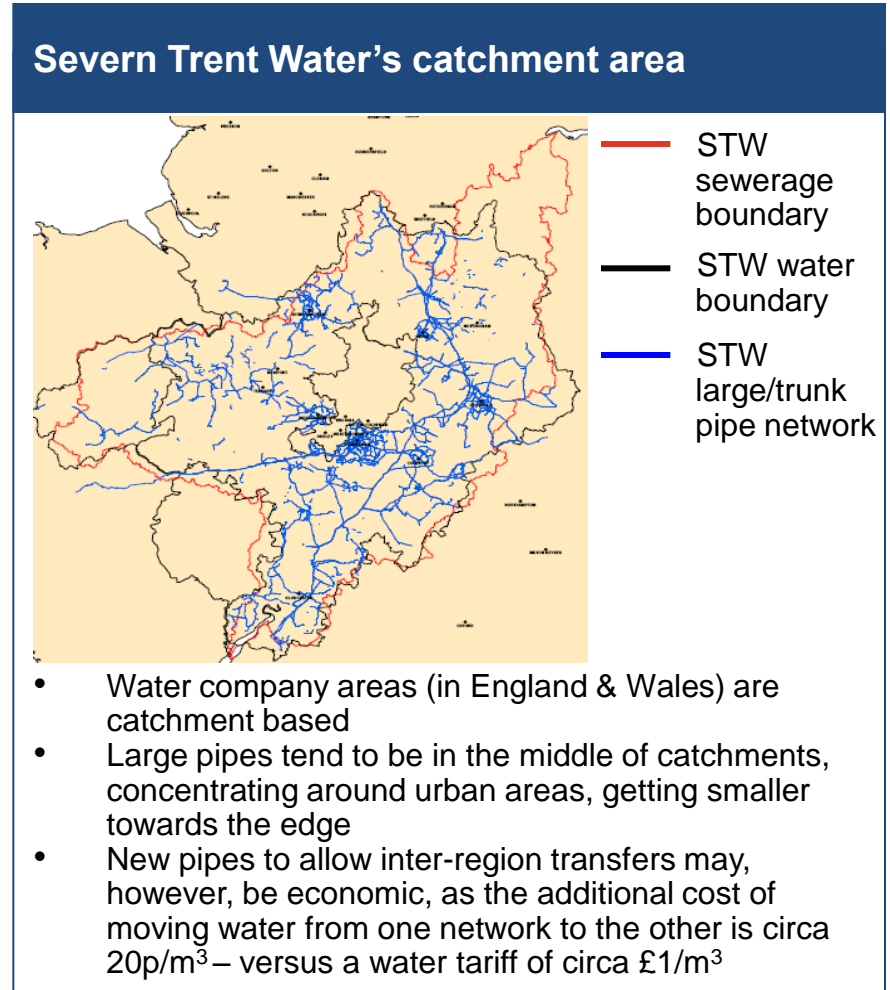
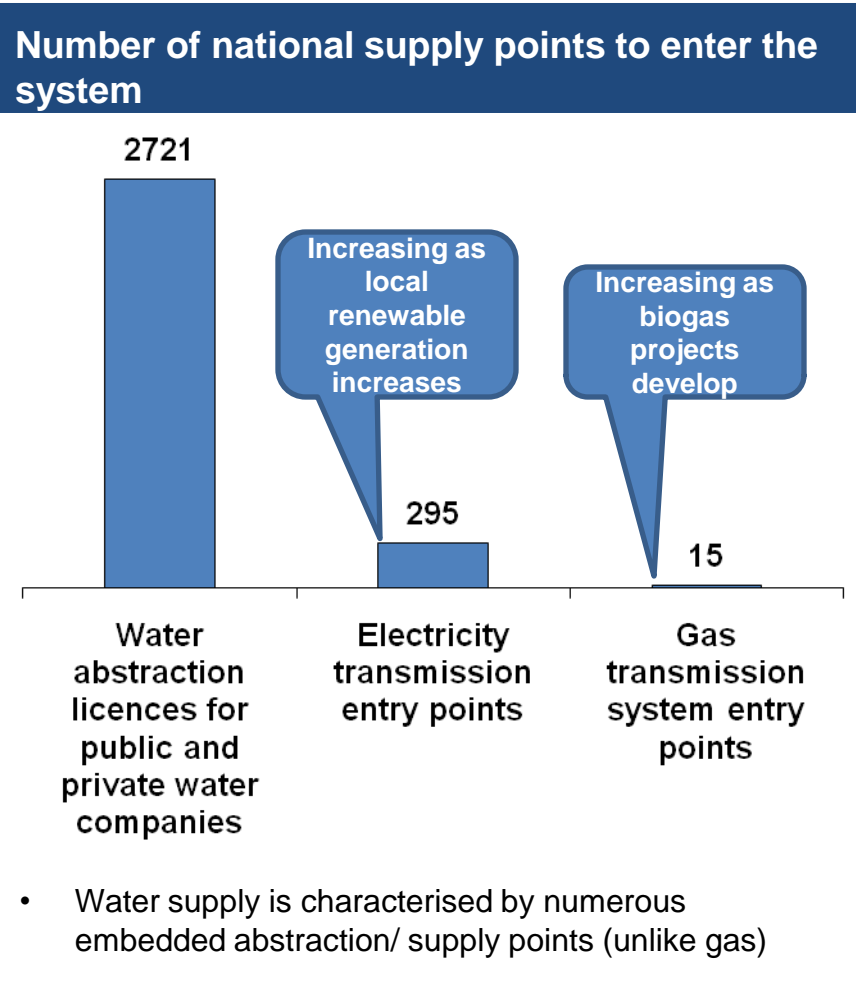
- On a mass basis, water is 1/600<sup>th</sup> the price of gas
- Cost to move gas or water around a network are broadly proportional to the mass, however, gas tends to be moved much further than water

## The fundamental differences are reflected in the split of a customer's bill



- Most of the gas bill consists of the cost of producing the resource
- Most of the cost of water is in the distribution infrastructure

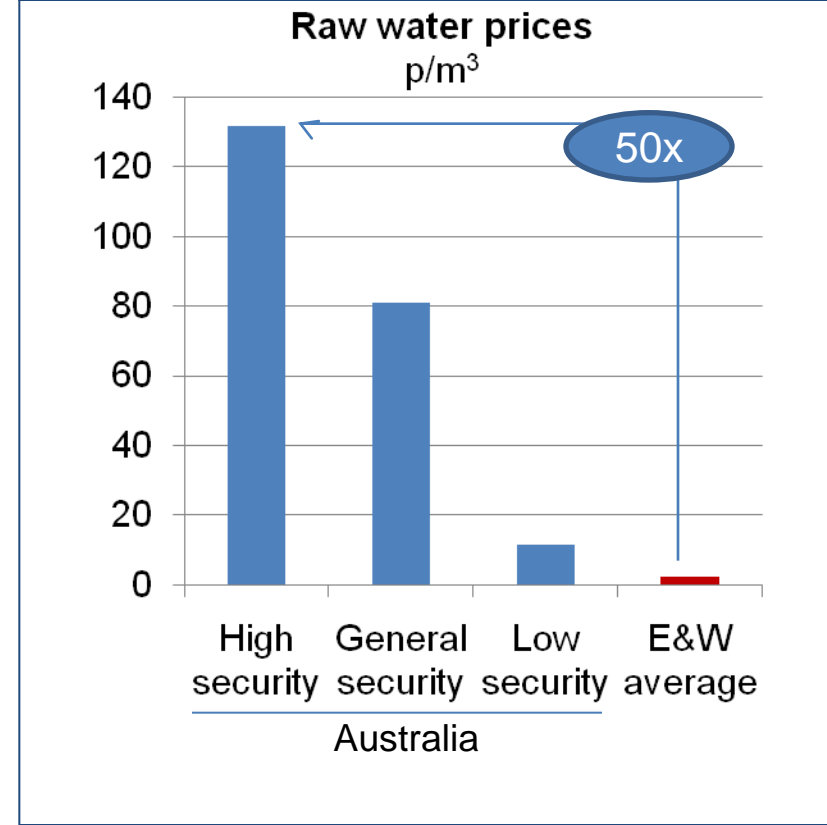
# The low cost of water has prevented a transmission grid being developed, and hence water has many more local sources than either electricity or gas



# In the Australian water market, where water trading has succeeded, raw water prices are up to 50x higher than in the UK

- Three types of licences available to trade in the Murray Darling Basin (Australia's largest water market)
  - High security / high reliability
    - Potable water supplies
    - Permanent crops (e.g. fruit orchard)
  - General security
    - Annual crops (e.g. wheat)
  - Low security
- In E&W, abstraction prices recover the costs of administration rather than the “value “of water
- Raising abstraction prices directly or through market mechanisms have massive implications for customers.
  - Moving prices from 2.5p/m<sup>3</sup> to 50p/m<sup>3</sup>, (ie not even to the level of general security in Australia), would add £2.3bn of annual cost to the system, ie raw water costs move from £5 to £100 per customer

Prices in the Australian market are up to 50x higher than the UK



Changes to abstraction pricing would change incentives to trade, but could also have severe bill impacts

# Both Ofwat and Cave's own calculations show value creation potential for a water trading market, albeit modest at a per customer level

## Ofwat believe that there is a possible £960m benefit available through water trading

- In *What's to play for*, published in April 2010, Ofwat identified
  - Benefits of £960m NPV
  - At a 4.5% real discount rate, this equates to £43m p .a. FCF available to all participants, incl customers
- Split 50:50 between companies and customer is approximately
  - £20m p.a. profit for companies
  - **£1 per customer**
- 31 interconnection schemes over next 25 years (~1 per year)
  - 14 within companies
  - **17 between companies**

## Cave have identified approximately £710 million benefit / efficiencies available through

- The Cave Review's final report on competition and innovation in water markets identified approximately £710m efficiencies by 2035
- Quoted the EA as identifying £260m over 26 years.
- In addition, Cave believed that competitive pressures and rivalry could lead to increase in the rate of ongoing efficiencies:
  - 0.5% improvement could lead to a fall in costs of £450m

Any changes to upstream water supply could have a benefit for customer bills, but the right market mechanism needs to be established to deliver this potential

# Compared to the electric or gas market, the water trading market will be significantly smaller

## Water trading – likely market

### Participants

- Circa 20-100 participants
  - 20 incumbents
  - Industrial (large customers)
  - Agricultural

### Number of trades per year

- 1 -2 large trades set up per year
- Some smaller trades (less than 1 MI/d )

### Value of market

- If we assume 400 MI/d water is traded @ 100 p/m<sup>3</sup>:
  - **£146 million** of water traded per year
  - Customer benefit ~ £20 million per annum

## Gas market

### Participants

- From the register of all gas licensees on Ofgem's website:
  - 4 gas interconnectors
  - 200 gas shippers
  - 44 domestic and non-domestic gas suppliers
  - 77 non-domestic only gas suppliers
  - 28 gas transporters

### Number of trades per year

- From the Business Enterprise and Regulatory Reform 2007 report:
  - 225,000 trades (in 2006 )

### Value of market

- **£157 billion** – *1000 times bigger than the possible water market*

## Electricity market

### Participants

- From Elexon's register of signatories to the balancing and settlement code:
  - 235 signatories (not all are active traders)
  - 1,100 consumers

### Number of trades per year

- Market for power related commodities are net generation output for a number of intervals usually in increments of 5, 15 and 60 minutes

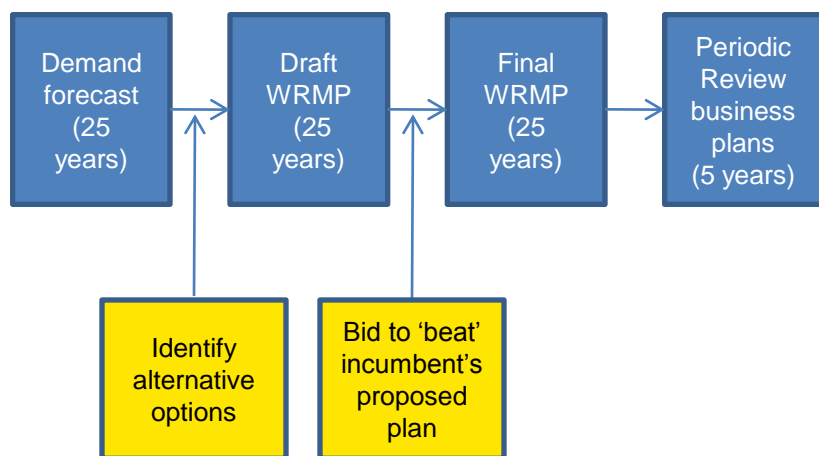
### Value of market

- **£65 billion** – *450 times bigger than the possible water market*

The market model we adopt should be fit for the size of market it addresses – i.e. 20-40 trades over 25 years, creating customer benefits of ~£20m p.a.

# We could implement water trading in a manner that builds upon current regulatory mechanisms

## Our alternative market mechanism builds on the current process of the water resource management plan (WRMP)



- Companies required to consult with neighbouring providers (incumbents and new entrants) when drafting WRMP to identify potential options to supply demand.
- Lowest cost options are included in draft WRMP with evidence of options considered
- Companies are obliged to select lowest cost option, which is then built into the final WRMP (a key input to the periodic review business plan)

## Changes required to make this model work

### Incumbent companies

- Must include valid bids into process as the draft will be considered as binding – this may reduce the likelihood of gaming

### Environment Agency

- Revise the WRMP process
- Secure abstraction right for the winning bidder if a plan is approved

### Legislation?

- The changes can be enacted through existing primary legislation in the Floods and Water Management Act.
- The Secretary of State has the power to alter the WRMP process, although secondary legislation will be required to implement any changes

### Ofwat

- Review the access pricing regime to allow efficient entry
- Create a common contract for upstream provision
- Create a network code for rules of supply

This model would be cheap to implement, prevent splitting the existing RCV, achieve the same benefits for customers and be scalable should water trading exceed expectations

# We believe our alternative model has benefits for all stakeholders, and could be a viable first step solution

- **Defra**
  - Aligns with Defra/Atkins report on barriers to interconnectivity
  - Only requires secondary legislation and Floods and Water Act 2010 gives SoS powers to alter WRMP process
- **Environment Agency**
  - Could be seen as improvement to existing WRMP, with minimal disruption and resource requirements
  - Prevents creating a new market mechanism function
  - Framework allows scarcity charging to be dealt with separately
- **Ofwat**
  - Seen as a proportional response to opportunity and benefit for customers
  - Could deliver a functioning water trading model with less perceived risk to the industry
- **Water undertakers**
  - Incremental change from current process
  - Protects RCV and hence protects against incremental financing costs on existing RCV
  - Creates mechanism to encourage innovation
- **New entrants**
  - Allows wide range of products to be bid in (eg demand management solutions)
  - Low costs of entry due to standard codes and contracts

**We will continue to develop our thinking in this area and make a constructive contribution to the development of the sector**

**For more information go to:**

[www.stwater.co.uk/changingcourse](http://www.stwater.co.uk/changingcourse)

