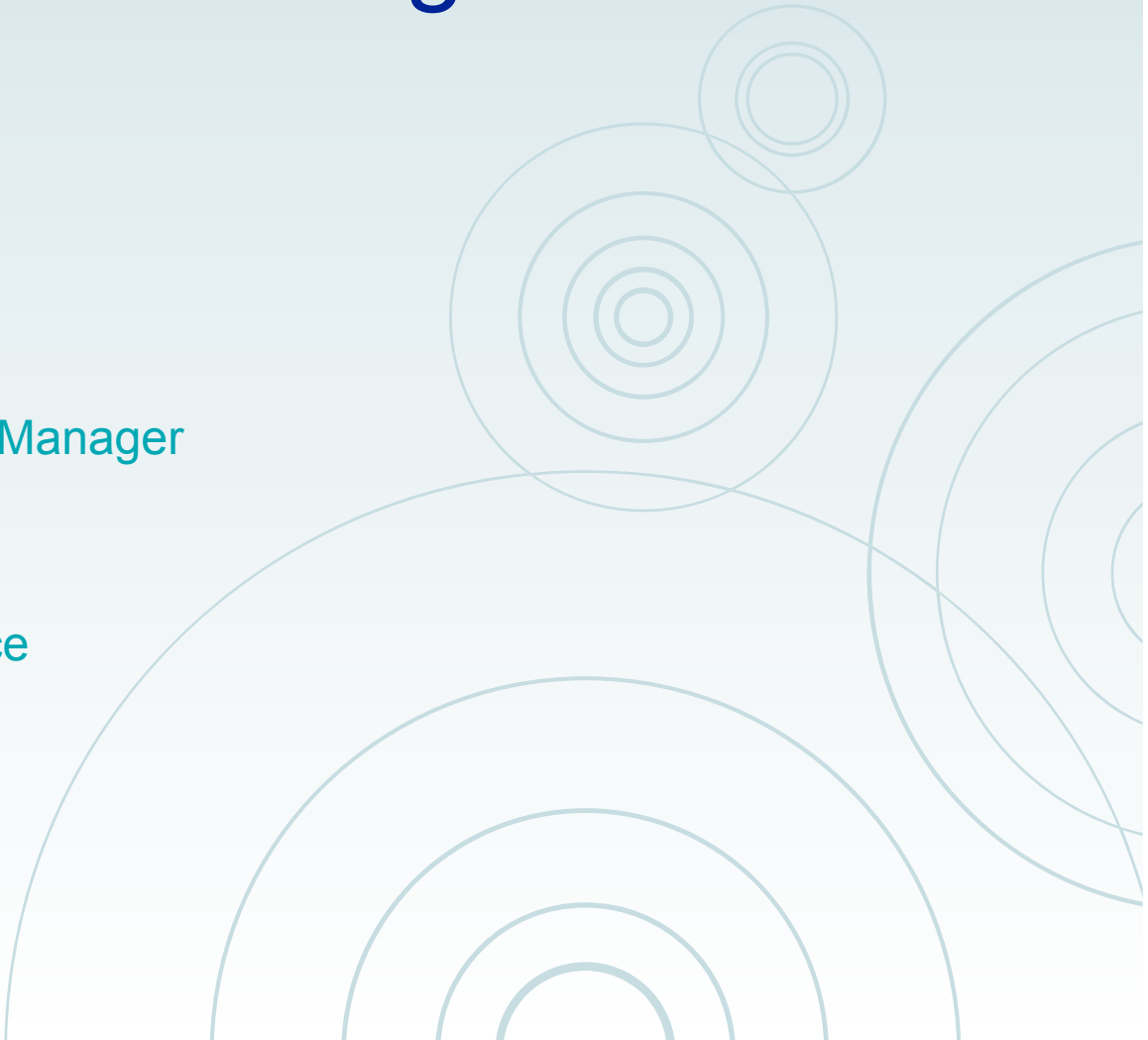

Water re-use in buildings

A water industry perspective

Doug Clarke, Water Efficiency Manager

WatEF Water re-use conference
Brighton, 8th April 2014



What are the key challenges facing the water industry?



- **Levels of service**

- Security of supply
- Flooding / drought



- **Environmental**

- Sustainable abstraction
- Reducing our carbon footprint



- **Financial**

- Affordable bills
- Competition

Sustainability

Future challenges: Sustainability

Innovation is the key to ensuring the long term sustainability of the water sector

- **Affordability**

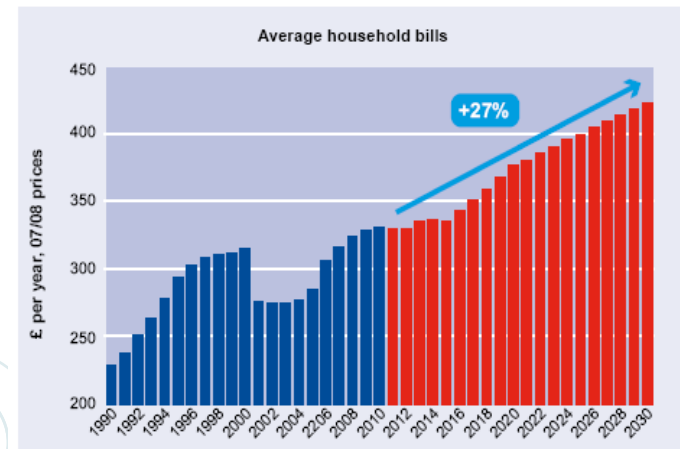
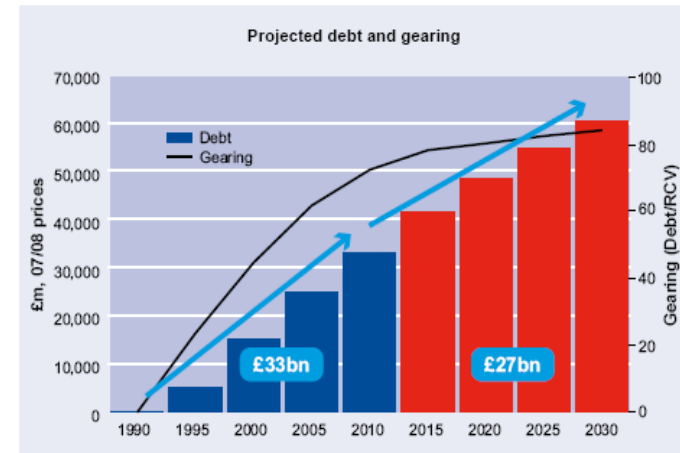
- Changing Course

Increased borrowing, customers bills and carbon emissions unless we innovate

- **Regulation**

- Water Framework Directive (2003)
- Future Water (2008)
- Cave review (2009)
- Service Incentive Mechanism (2011)
- Water white paper (Dec 2011)

All call for greater innovation in the water sector



We are facing a significant gap in our supply demand balance - 100MI/d by 2040

Increasing demand and variable rainfall patterns will create a challenge for our supply demand balance

- **Restoring sustainable abstraction**
 - 85 MI/d reduction by 2040
- **Climate change predictions 2080**
 - Summer rainfall 50% of current average
 - More extreme weather events
 - 1 in 30 events may become 1 in 15
- **Population growth 2030**
 - England's population predicted to increase by 15%
- **Changes in agriculture**
 - Increased irrigation due to climate change



Options / opportunities

How do we plug the gap using demand side options?

- **Leakage reduction**
 - 25 MI/d reduction - PR14 target 424MI/d
- **Water Efficiency programme**
 - 25 MI/d reduction
- **What could grey water re-use offer**
 - ~30% water use bathing
 - ~30% water use is toilet flushing
 - Over 100,000 new homes 10MI/d reduction?
- **We think re-use could offer some opportunity but there are problems**



Frankley WTW – 360 MI/d

What do customers think?

Customer attitudes and interest in the subject

Based on customer research of over 2000 Severn Trent Customers

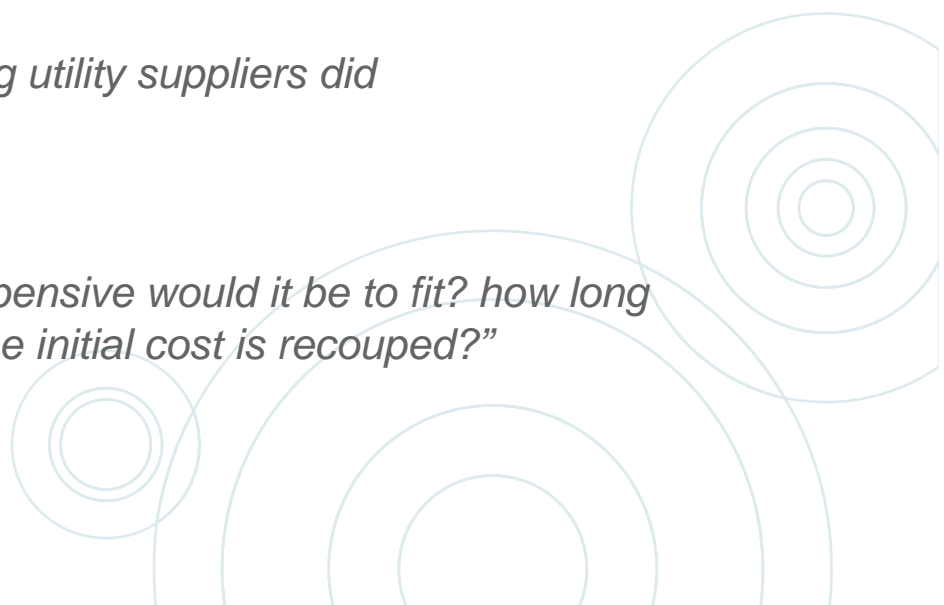
69%

..find either capturing rainwater or reusing bath and shower water appealing

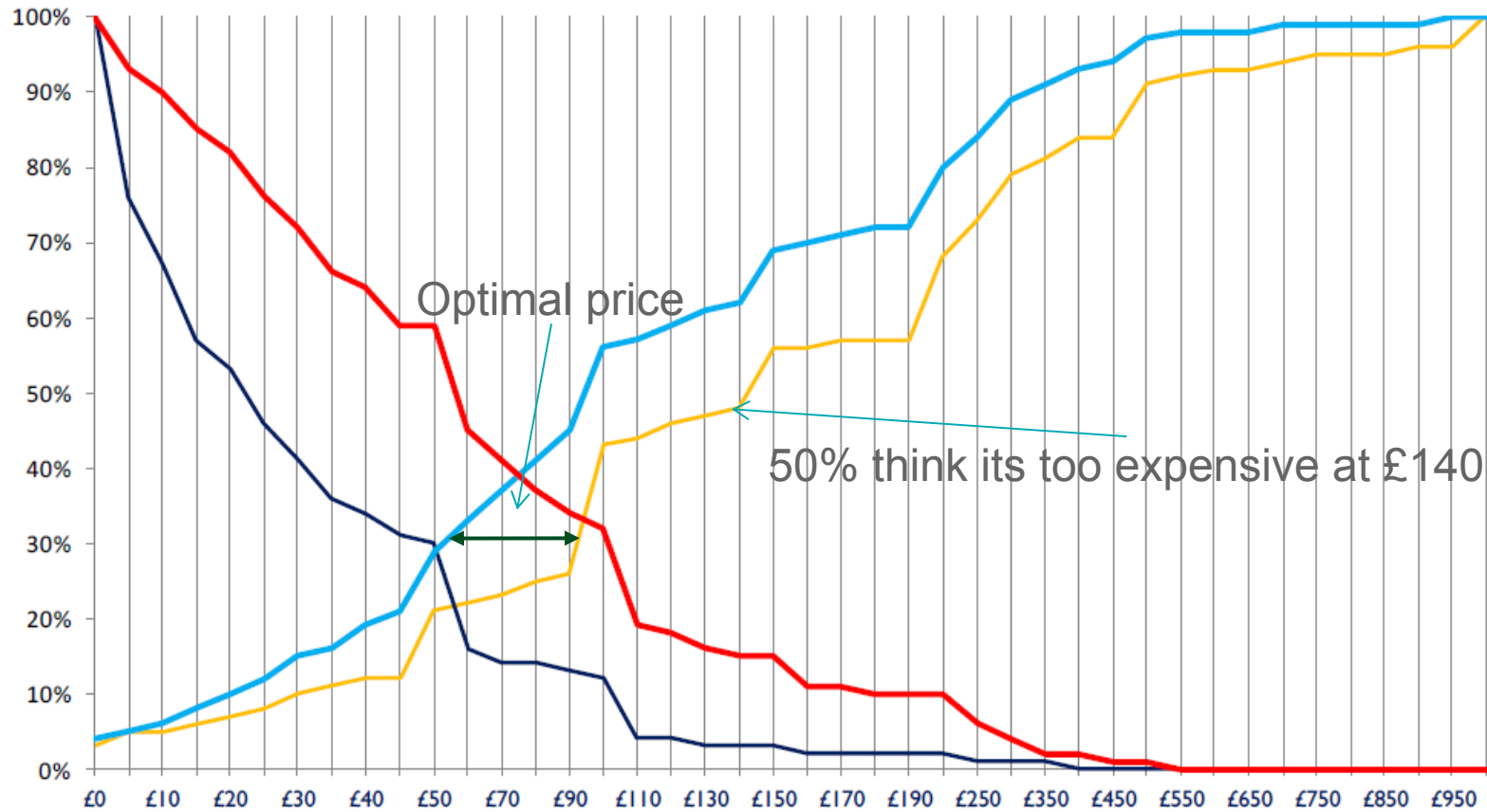
“After a lot of research, personally I think it a super idea, and would be pleased to be one of the first to consider the system!”

“Fantastic idea about time big utility suppliers did something sensible”

“How expensive would it be to fit? how long before the initial cost is recouped?”



But customers price expectations are currently low



too expensive

too cheap

getting expensive

bargain

We are driving innovation

- **Water re-use innovation workshop**
 - Partnership
 - Innovation
- **Evaluating rainwater harvesting**



- **Evaluating grey water re-use**



The poster features a blue and white color scheme. At the top left, there is a grey cloud with blue rain falling into a blue circular graphic. To the right, a circular inset shows a young child with a yellow duck on their head in a bathtub. Further right is a toilet icon. The text is arranged in a clean, modern layout with various font sizes and weights. A logo for 'SEVERN TRENT WATER' is in the top right corner. The bottom of the poster shows a cross-section of a roof with a rainwater harvesting system, with a blue circle labeled 'The big water plan' next to it.

**SEVERN
TRENT
WATER**

Water re-use innovation workshop

Together we can stimulate the development of a viable water re-use system for households

You're invited to an innovation workshop on **4 March 2014**, aiming to develop new ways of re-using water.

Population growth and variations in weather are just a few factors contributing to the need to make better use of our water sources.

We would like to work in partnership with key organisations. Together we can develop practical and cost effective rain water harvesting and grey water systems.

The workshop will host a wide range of speakers including:

- Developers
- Housing Providers
- Manufactures
- Members of Local Authorities
- NGOs

There'll be facilitated discussions about developments in this area - to identify potential for collaboration.

With your help innovation in water re-use could reduce:

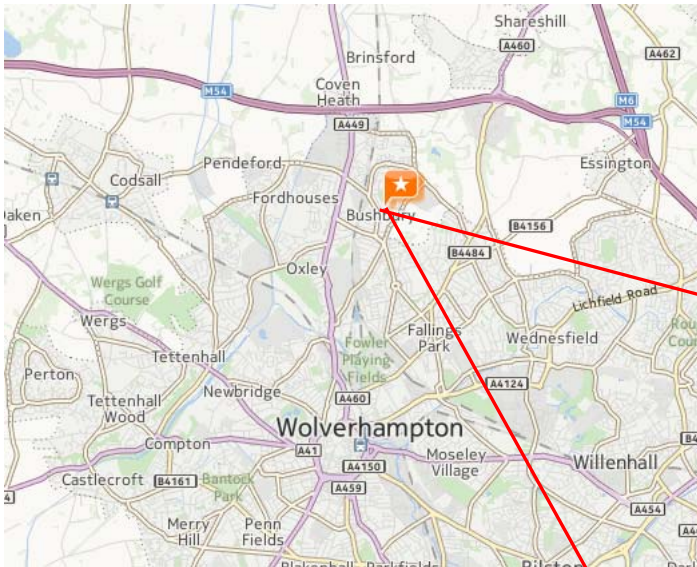
- household water usage by 30%
- household water bills
- risk of flooding in bad weather
- reliance on water from our rivers

To register email innovation-events@severntrent.co.uk

The big water plan

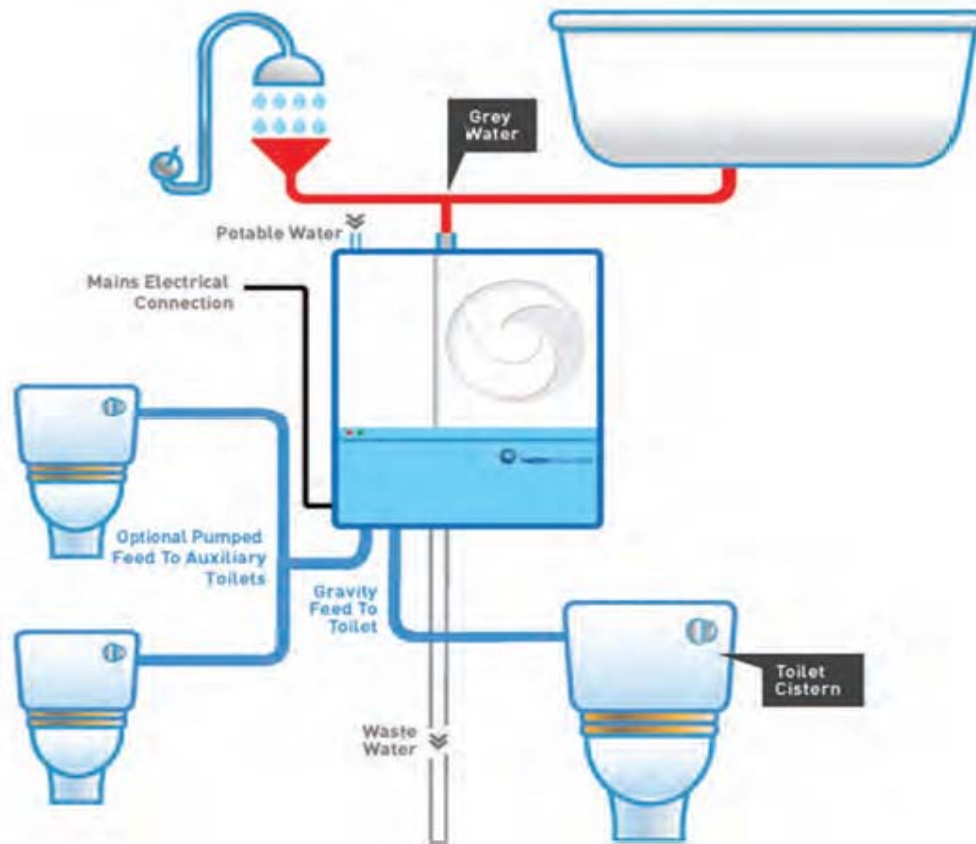
Grey water re-use trial

First water company trial of these units



The low carbon timber homes

The ReAqua system we are testing



Project outcomes

An understanding of the socio-economic viability of the ReAqua grey water re-use system

- **Customer perception**
- **System reliability**
- **Measured water savings**
- **How to accelerate to market?**
 - Subsidies
 - Economic entry level
 - Promotion
 - Political



Thank you



Any questions?



Doug Clarke – Water Efficiency Manager
WatEF Water Reuse Conference
Brighton, 8th April 2014