



Ricardo-AEA

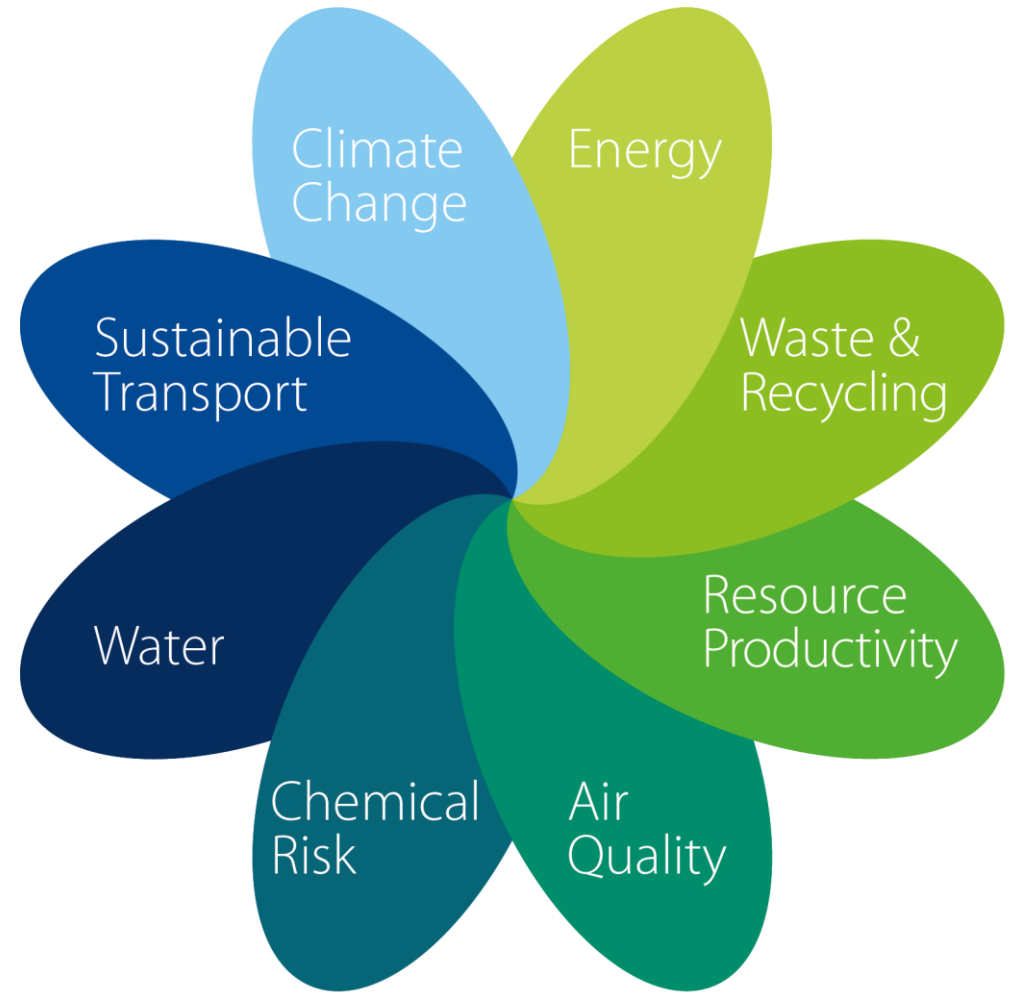
Progress in Water Conservation 2010-2013

Aaron Burton, Stuart Ballinger

WATEF Water Efficiency Conference,
September 2014

My sponsor - Ricardo-AEA

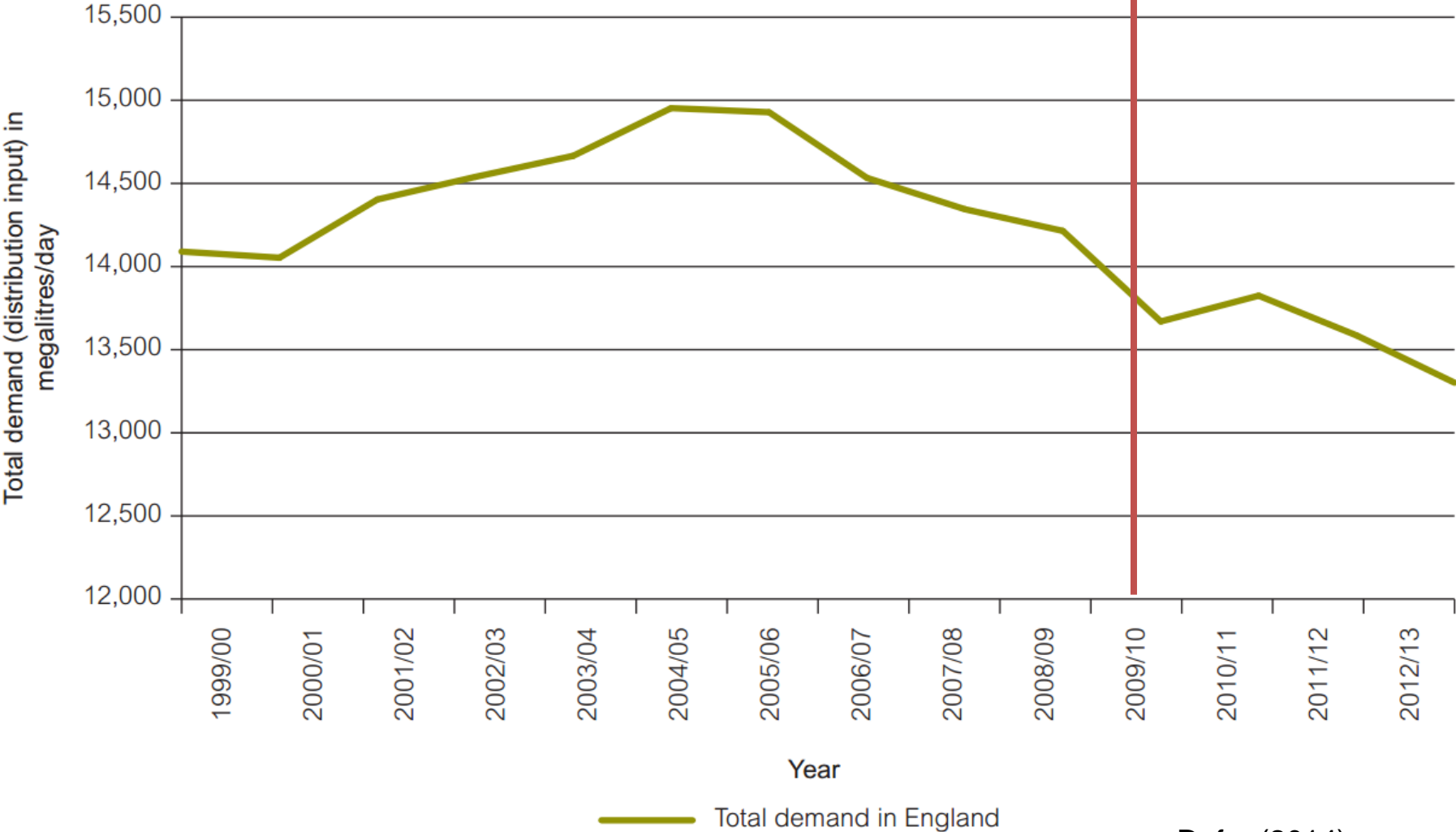
- Internationally-renowned environmental consultancy
- Heritage of world-leading scientific/technical advice and policy support
- Today providing analysis and solutions for major environmental challenges worldwide
- Operating across a number of domains
- Over 400 technical staff
- Part of Ricardo Plc



- Growing team of water experts providing:
 - Water efficiency services and advice
 - Large scale nationwide programmes
 - Commercial and domestic auditing
 - Technical services for water efficient products and markets
 - Water Technology List
 - Market Transformation Programme
 - Technology appraisals
 - Policy support and research
 - Water resources management
 - Climate change and adaptation
 - Drought and flood risk
 - Water quality

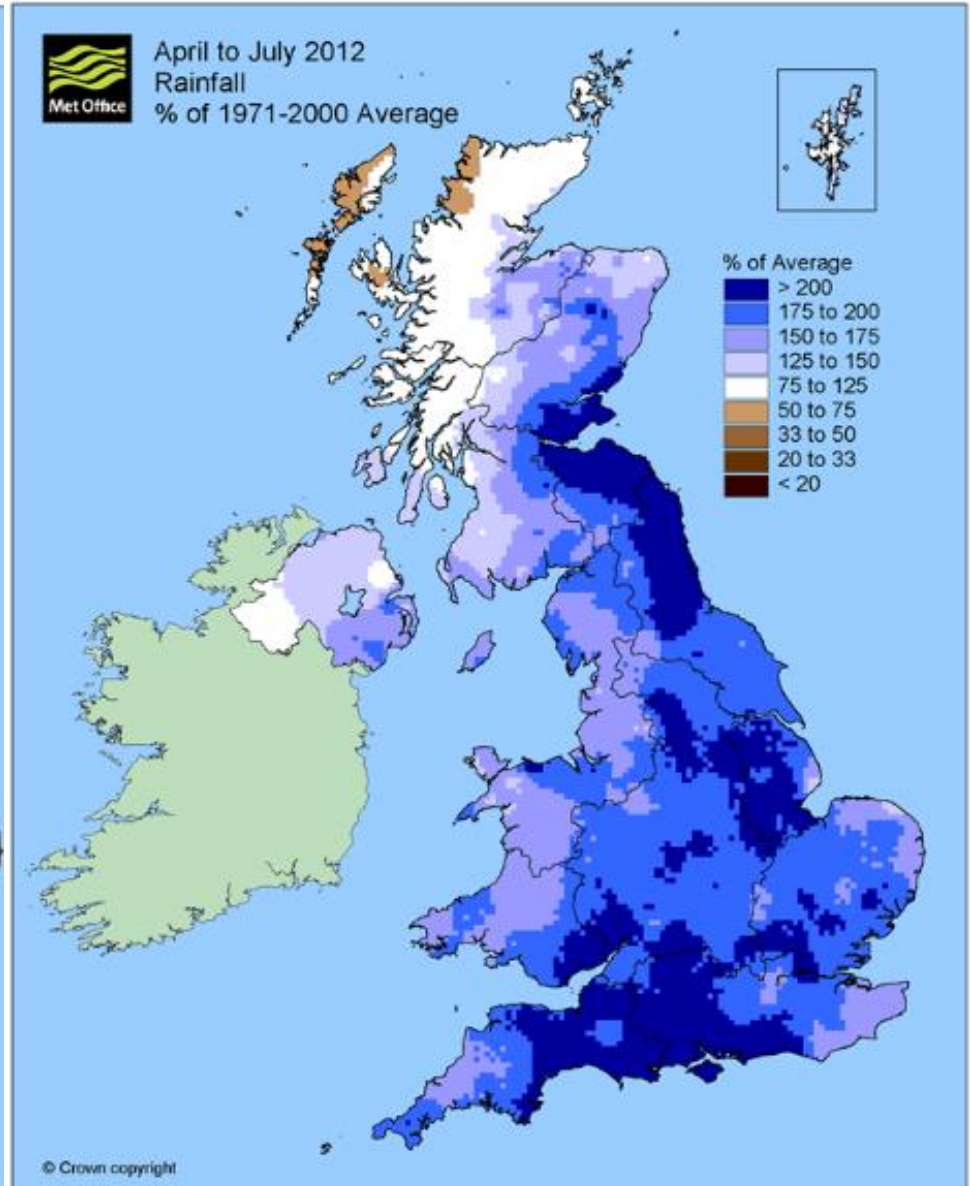
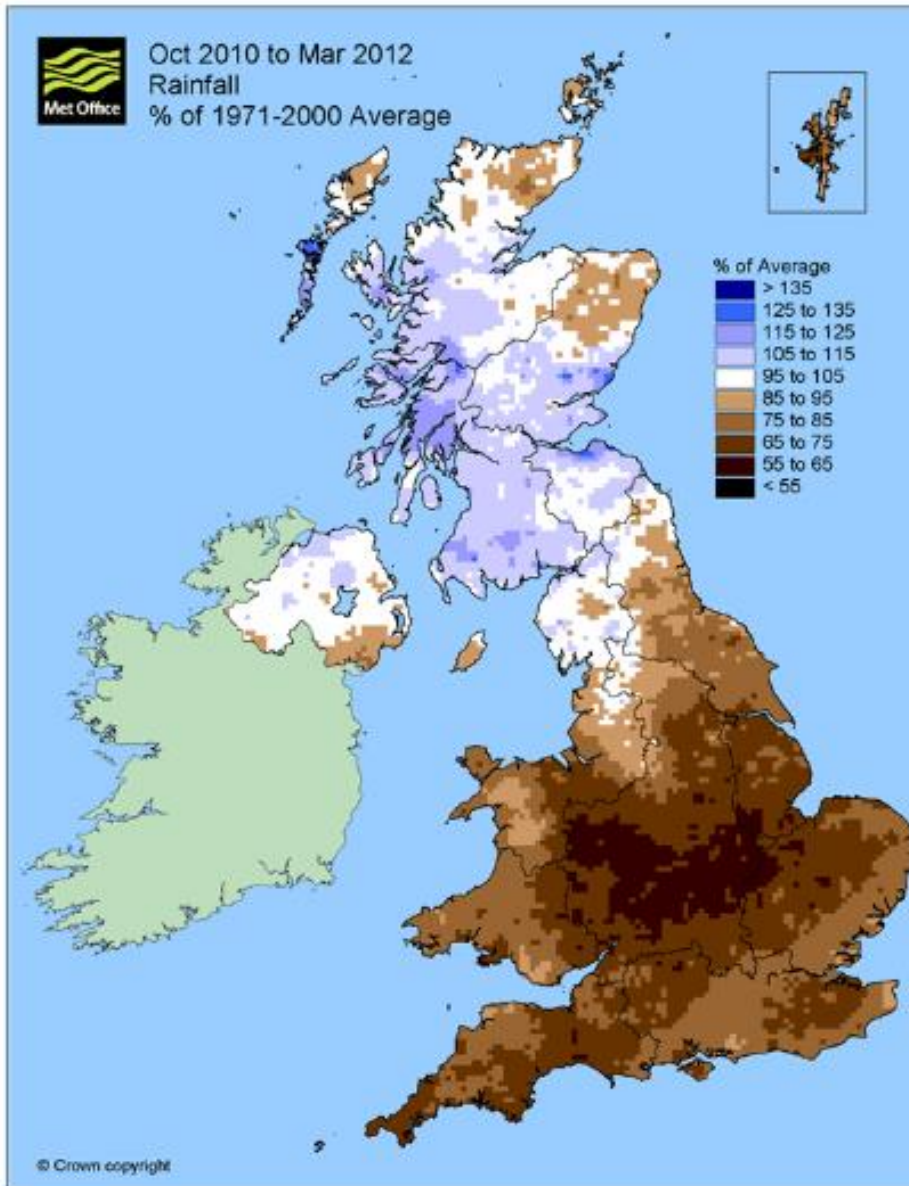


Total demand for water projected by water companies in England 1999 to 2013 (MI/d)



Defra (2014)

Drought then flooding





Department
for Environment
Food & Rural Affairs

www.gov.uk/defra

Action taken by Government to encourage the conservation of water

Progress report to Parliament on the steps taken
to encourage the conservation of water as required
by Section 81 of the Water Act 2003

May 2014

Water Act 2003, S81(3)

“After the period of three years beginning with the date on which this section comes into force, and after each succeeding period of three years, the Secretary of State must prepare a report about the steps taken by him under this section, and about any such steps which he proposes to take.”

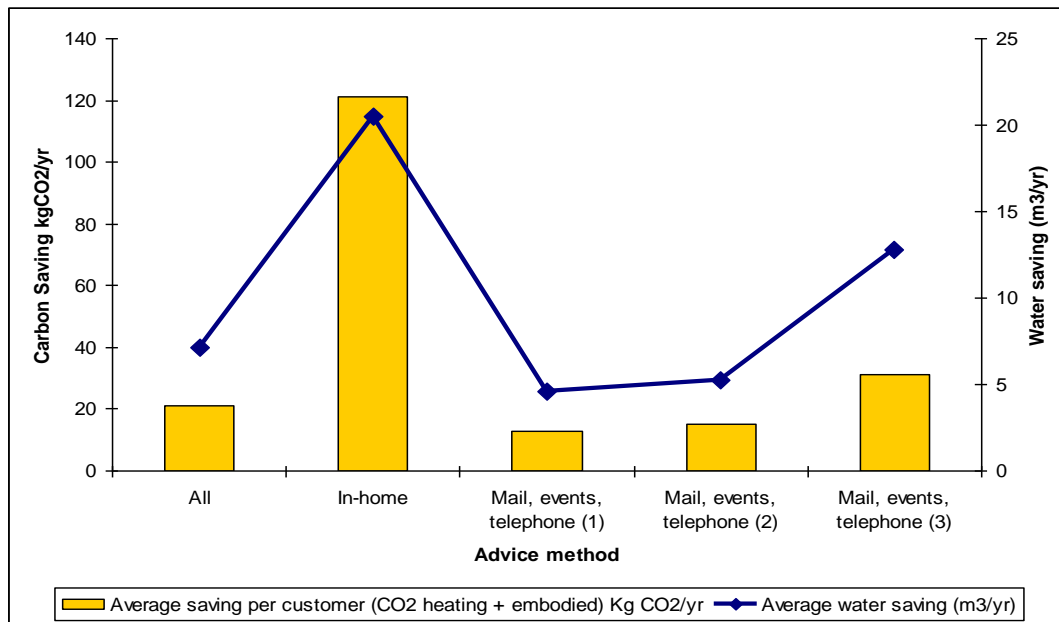
Ricardo-AEA approach to support Defra:

- Questionnaires
- Interviews
- Literature review

Defra edited the draft report provided by Ricardo-AEA to produce the final, including a forward-look.

- Key points

- Benefits of personalised in-home advice to enable the greatest water and energy savings; utilising ‘moments of change’ to introduce or reinforce water efficient behaviours
- Need to carefully apply any high level messaging on water efficiency
- Understanding water use practices rather than attitudes, behaviours or simply volume used



Community programmes



CIRIA (2013) Creating water sensitive places – scoping the potential for Water Sensitive Urban Design in the UK

WATER REUSE

One simple solution could be using grey water from the sink for flushing the toilet - saving money and reducing wastewater leaving the house.



RAIN GARDEN

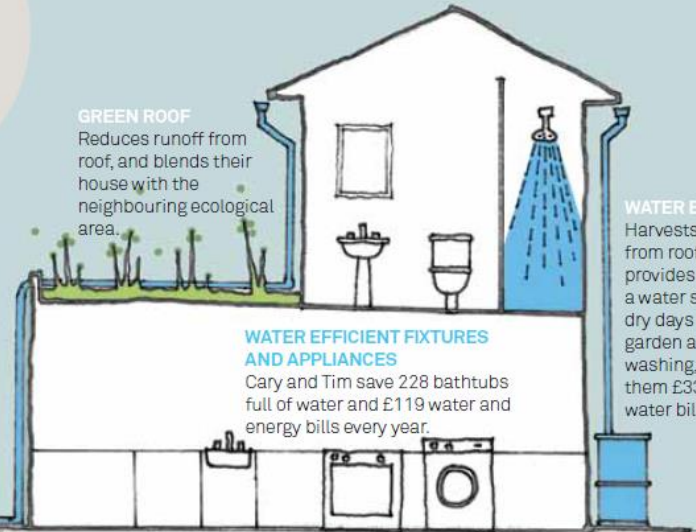
Cary disconnected her back downpipe to help reduce runoff from the property and reduce neighbourhood flooding. It now drains to a rain garden, which soaks up rain so Cary's plants thrive, without her watering them.

WATER, PEOPLE AND PLACES



GREEN ROOF

Reduces runoff from roof, and blends their house with the neighbouring ecological area.



WATER EFFICIENT FIXTURES AND APPLIANCES

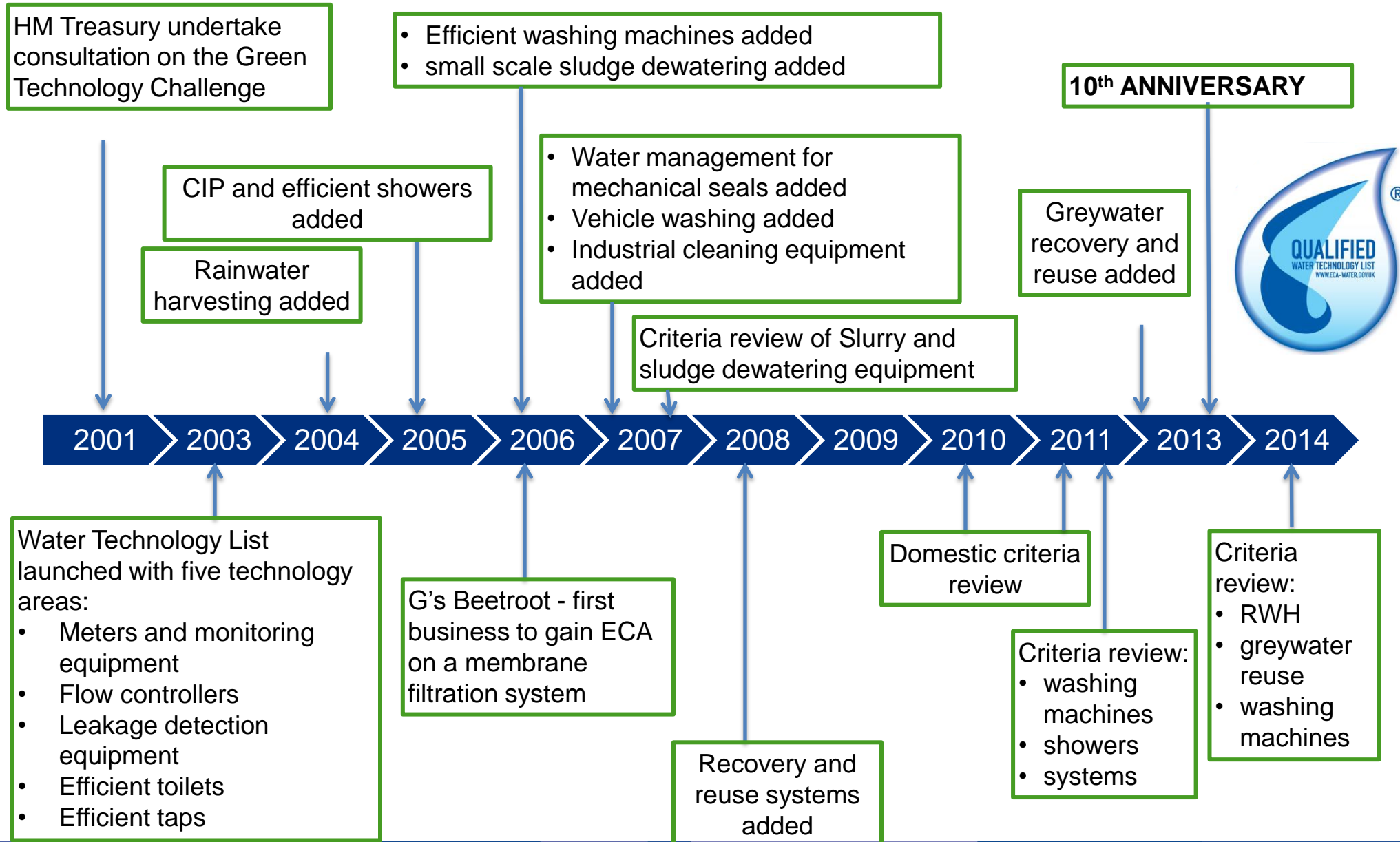
Cary and Tim save 228 bathtubs full of water and £119 water and energy bills every year.

WATER BUTT

Harvests runoff from roofs and provides Cary with a water source on dry days for the garden and for car washing, saving them £33 on the water bill.

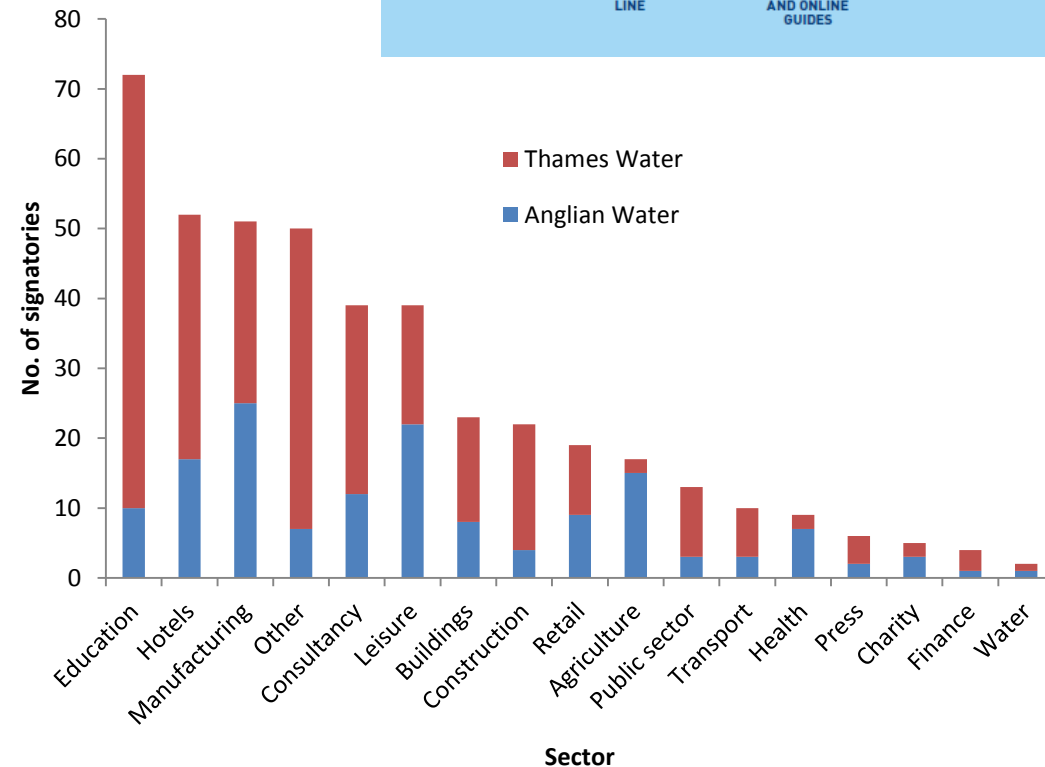
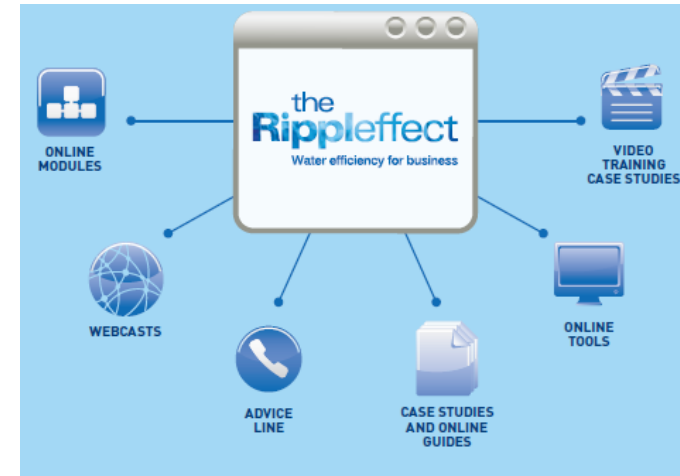


Water Using Products – Water Technology List



Non-household water use - Rippleeffect

- 433 organisations signed up to Rippleeffect pilot projects
 - 284 Thames Water
 - 149 Anglian Water
- Range of sectors
- Level of support varied
 - Access to modules only
 - One-to-one
 - Site visits
- Key opportunities
 - Measurement and monitoring
 - Lack of understanding of true cost
 - Wastage of water
 - Low cost, no cost measures
 - Staff awareness
- Savings
 - Thames Water 377, 267 m³/yr
 - Anglian Water 312,226 m³/year



Non-household water use – Projecting 2050s demand for water from Food and Drink Manufacturing

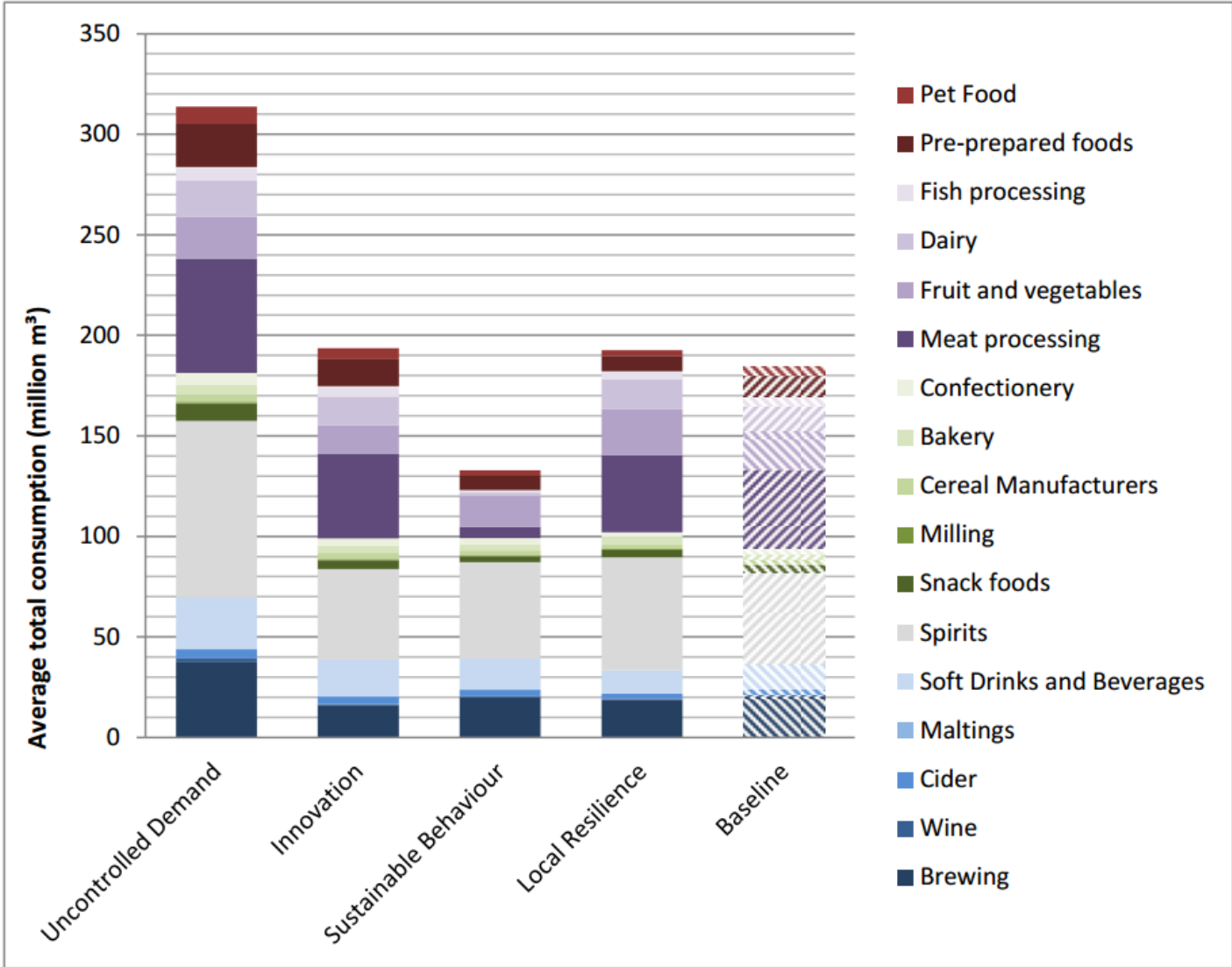
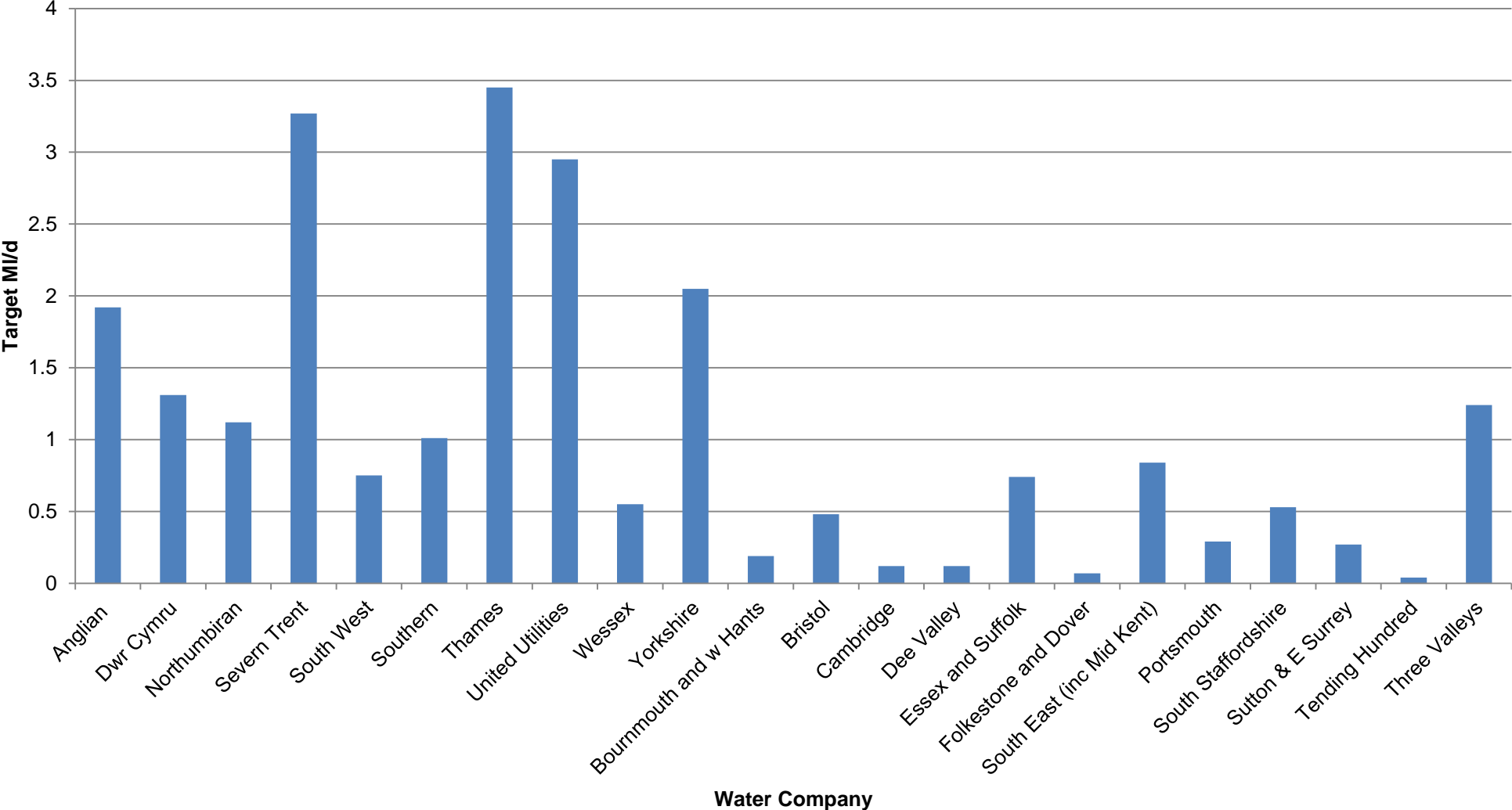


Figure 8 Demand for water in the 2050s for food and drink manufacturing sub-sectors

Government Guidance and Regulation - Ofwat Water Efficiency Targets 2010/11 to 2014/15



Developing the evidence base



Evidence Base for Large-scale Water Efficiency
Phase II Final Report



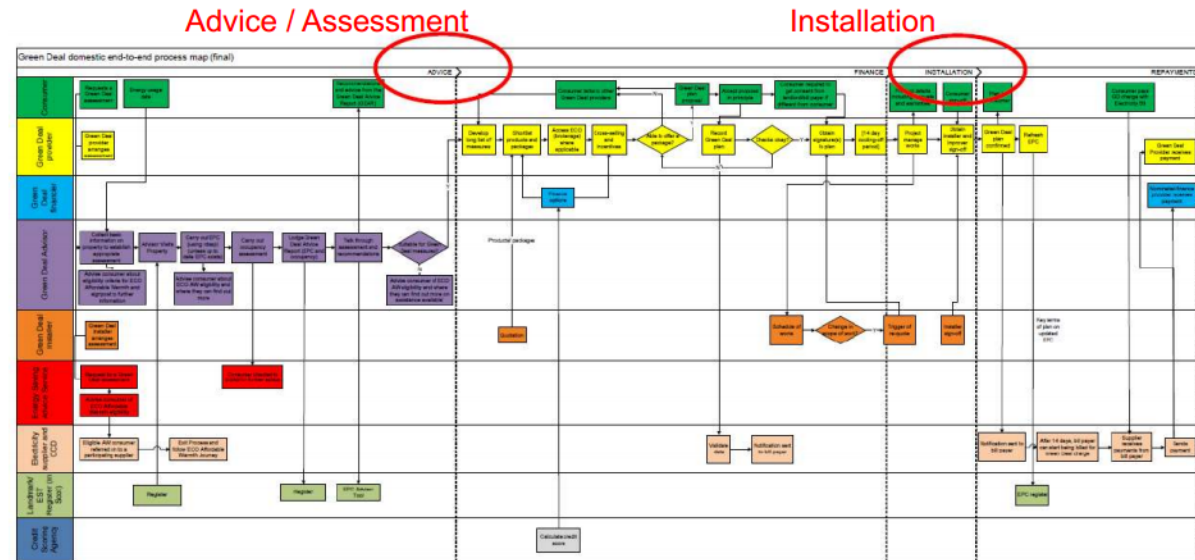


Green Deal Guidance for the Water Sector



November 2012

April 2011



Water Device	Household Occupancy	Water Saving	Water Saving	Household CO2 saving	Fuel bill saving	Water bill saving	Fuel + Water bill
		l / day	l / yr				
Water-efficient Showerhead	Single	4.43	1,616.89	14.70	3.60	3.89	7.49
	Average 2.3 Family	10.30	3,762.21	34.20	8.39	9.05	17.44
	Family of 4	17.71	6,467.55	58.79	14.42	15.56	29.97
Tap aerator	Single	0.43	156.97	0.77	0.19	0.38	0.57
	Average 2.3 Family	1.00	365.25	1.79	0.44	0.88	1.32
	Family of 4	1.72	627.90	3.08	0.76	1.51	2.27
Dual-flush retrofit	Single	9.85	3,597.71	-	-	8.65	8.65
	Average 2.3 Family	22.92	8,371.23	-	-	20.14	20.14
	Family of 4	39.40	14,390.85	-	-	34.62	34.62
Cistern Displacement Device	Single	5.00	1,826.25	-	-	4.39	4.39
	Average 2.3 Family	11.63	4,249.36	-	-	10.22	10.22
	Family of 4	20.00	7,305.00	-	-	17.57	17.57
Showerhead + Tap + CDD	Single	9.86	3,600.11	15.47	3.79	8.66	12.45
	Average 2.3 Family	22.93	8,376.82	35.99	8.83	20.15	28.98
	Family of 4	39.43	14,400.45	61.87	15.17	34.64	49.81

What next for Water Efficiency?

- Defra report includes a forward look
- My thoughts
 - PR14 and the challenge of delivering large scale water efficiency programmes
 - Continuing the collaborative water efficiency fund – strategic research
 - Review and update evidence base – needs to be functional to support Water Companies and policy making
 - Water Resources Management Plans 2019 and integrating a new range of policies
 - Answering some of the remaining questions from Walker Review – who is responsible for water efficiency?
 - Transitioning to Water Sensitive Cities and learning from international experience



