

Appendix A details

Scheme Type	Scheme Sub-Categories/Sub-Components
Resource Schemes	
Direct river abstraction	
New reservoir storage	- On-stream reservoirs - Pumped-storage reservoirs - Flood storage - Development of disused gravel pits (or redundant quarries) as reservoirs.
Reservoir raising	
Groundwork wells (boreholes)	- New sources - Improve existing sources
Infiltration galleries	
Artificial Storage and Recovery wells (or 'Aquifer Storage and Recharge') (ASR)	
Aquifer Recharge (AR)	
Desalination	Membrane separation (electrodialysis reversal, reverse osmosis)

	Thermal processes (multistage flash distillation, multiple effect distillation, mechanical vapour compression)
Bulk transfers (including changes to existing transfers, and transfers from sources both inside and outside the company's own supply area)	- By canal - By river - By pipeline - Enhancement to existing transfer
Rainwater harvesting	Direct collection and storage of rainwater e.g. on farms or at community level.
Reclaimed water	- Reclaimed domestic wastewater - Reclaimed industrial and commercial wastewater (for domestic, commercial and industrial users)
Tankering of water	
Sophisticated conjunctive management	

Scheme Type	Scheme Sub-Categories/Sub-Components
Customer Side Schemes	
Compulsory metering	Industrial premises

	• Commercial and public sector premises • Swimming pool owners • Sprinkler/hose pipe users • Households with an outside tap
Enhanced metering / Smart metering	• Promotional campaigns or gamification to increase optant rates or increase savings through behavioural interventions.
Metering of sewerage flow	• Optional scheme
	• Compulsory scheme
Introduction of special fees	Introduction of separate additional fees or tariffs for: • Sprinkler users • Hose pipe users • Outside tap users • Swimming pools
Changes to existing measured tariffs	• Discontinued declining block rate tariffs
	• Discontinued “neutral” charges
	• Increasing the volumetric charge
	• Introducing rising block volumetric charges

	Introducing Summer/Winter or other seasonal tariffs
	Introducing daily/peak/off-peak tariffs for at least some seasons
	Charge only above a defined “subsistence” level of use (to protect low income families)
Introduction of special tariffs for specific users	Introducing “interruptible” industrial supplies
	Introducing lower charges for major users with significant storage
	Introducing higher-cost “ban-free” sprinkler or hose pipe licences
	- Introducing spot pricing for selected customers “Lifestyle” tariffs
Targeted water conservation information (advice on appliance water usage)	- Industrial customers/bodies - Commercial customers - Households - Public sector (e.g. schools, hospitals, community groups) - Recreation facilities (parks and gardens, golf courses) - Designers of hot water systems, taps and water using appliances

	• Purchasers of water-using appliances (i.e. in showrooms) • Labelling water consumption of appliances
Advice & information on direct abstraction and irrigation techniques	• Drip vs. spray irrigation • Direct abstraction • Other techniques for reducing evaporation
Advice & information on leakage detection and fixing techniques	• Industrial • Commercial & public sector • Household • Agricultural
Water saving devices	• Appliance exchange programmes ◦ Washing machine ◦ Dishwasher ◦ WCs ◦ Other • Company subsidy to appliance manufacturers • Company subsidy to consumers for the purchase of water saving appliances • Encouraging or requiring greater use of water saving technology in new and/or existing buildings (industrial, commercial, public sector and household) ◦ Fitting of showers ◦ Low volume shower heads

	○ Limiting purchase/use of “power showers” ○ Low flush toilets ○ Dual flush toilets ○ Fitting new toilets ○ Composting toilets ○ Waterless urinals ○ Retrofitting existing toilets ○ Shallow trap toilets ○ Flush controller for urinals ○ Timing devices ○ “people detectors” ○ Self-closing taps (i.e. push operation taps that cut off the supply after a short time) ○ Spray taps ○ Toilet bags cistern dams (by displacing part of the cistern volume, reduce the flush volume) ○ Hose activated by a spring loaded trigger mechanism ○ Limited purchase/use of instantaneous water heaters/boilers ○ Research and development into water saving technology
Recycling and re-use	• Encouraging or requiring indirect waste water re-use (i.e. abstraction downstream from the discharge or treated waste water

	e.g. for agricultural irrigation and industrial cooling)
	• Encouraging or requiring direct waste water re-use (i.e. re-use of treated waste water via pipes or other conveyance)
	• Encouraging or requiring water recycling (i.e. direct use of untreated “grey water”) ○ Industrial ○ Commercial and public sector ○ Household (e.g. using water from baths/showers/basins for toilet use) ○ Fitting recycling systems in new houses ○ Fitting recycling systems to existing houses
Other / water efficiency enabling activities	• Sponsoring “waste-minimisation” projects (e.g. Aire & Calder)
	• Tradable delivery entitlements • Use of non-potable water (e.g. sea water, rainfall) • Programme of re-washing customers’ taps • Lobbying for tighter or companyspecific water regulations • Improving the enforcement of water regulations

	• Water butts • Targeting gardeners for rainwater harvesting • Implement water efficiency research outcomes (Waterwise) • Planning restrictions preventing new development
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Distribution Management Options	
Customer supply pipe leakage reduction	• Identification of Major Supply Pipe Leaks • Fixing Major Supply Pipe Leaks ○ At water company expense ○ At customers' expense
Leakage reduction	• Fixing of reported leak • Find and fix ○ Trunk mains ○ Distribution mains ○ Communication pipes ○ Supply pipe leaks and fittings
Leak detection	• Telemetry • District metering • Aerial and satellite imagery use

	• Sniffer dogs
Pressure reduction programmes (installation of pressure reducing valves)	
Advanced replacement of infrastructure for leakage reasons	
Distribution capacity expansion	• Trunk mains • Distribution mains • Other

Indicative production-side management options

Scheme Type	Scheme Sub-Categories/Sub-Components
Production Management Options	
Diagnostic studies	
Improved leakage detection and reduction on raw water mains	
Increase water treatment works (WTW) efficiency	• Reduce treatment works losses • Final effluent reuse