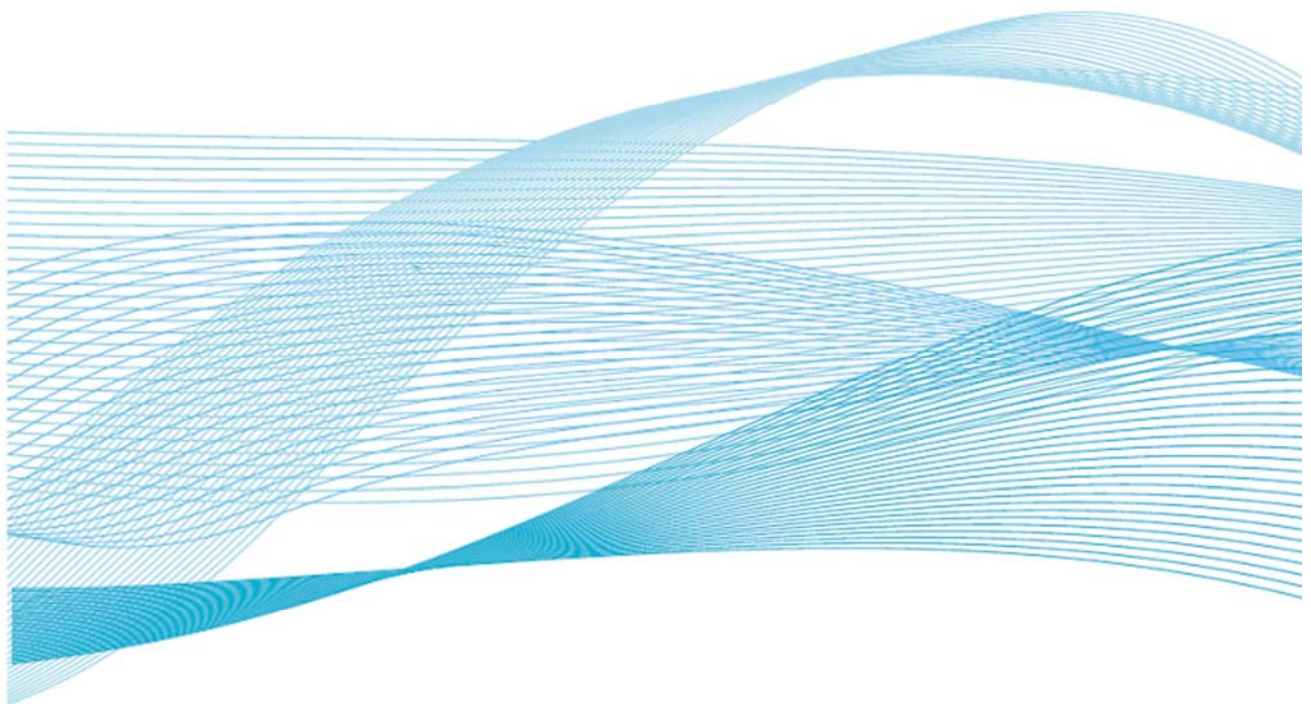




Water for people and the environment

Water resources action plan for [England](#)
and [Wales](#)



We are the Environment Agency. It's our job to look after your environment and make it **a better place** - for you, and for future generations.

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March 2010

Acting now to secure the future of water

Water is precious. It is essential for life. It supports the valued and diverse ecosystems of our wetlands, lakes, rivers, estuaries and the sea. It is vital to the economic recovery and growth, and key to health, recreation and tourism. It is used to generate power, run industries, grow food and in our homes.

Pressure on water resources will grow from increases in population, changes in lifestyle, climate change, the development of new technologies, and from changes in the use of land. These pose significant challenges to the way water resources are managed in England and Wales, and as a result, the way water is valued will become more important.

We are planning for what we know the future will bring, but we also need to plan for what the future might bring. We need a strategic approach to water management, otherwise we risk an expensive and damaging impact on the economy and the environment, which will affect lifestyles.

In March 2009, we published our Water Resources Strategy for England and Wales 'Water for people and the environment'. It looks to 2050 and beyond and includes a number of high – level actions that are needed to deal with the future challenges facing water resources. This action plan shows how we propose to implement the national-led actions in more detail across England and Wales.

There is no single or simple solution to the pressures that we face. Many individuals and organisations are involved in, or have an interest in, water resources management. It is essential that we all work together to safeguard our water resources.

Ian Barker Head of Water

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1 Turning our water resources strategy into action

This national plan for England and Wales includes the actions we will take to progress towards delivering the aims and objectives of our strategy. We have developed a separate action plan for Wales in parallel with this plan which builds on the actions in our Water Resources Strategy for Wales. The approach taken for the two plans mirrors that taken for the Water Resources Strategy, with the action plan for Wales focussing on the elements which are particularly relevant to just Wales.

Each region within the Environment Agency has also developed a Regional Action Plan. The water resources strategy itself, and the supporting action plans can be found at www.environment-agency.gov.uk/wrs. The Regional Action Plans show how we propose to implement the actions within the Water resources strategy for England and Wales locally. They consider local pressures and priorities, and reflect the measures in River Basin Management Plans and our new Corporate Strategy.

We've designed our strategy actions to be flexible and incremental, whilst allowing for the bold changes that may be needed in the future. We will take a risk-based approach to implementing these actions and we will take account of the economic and social impacts when determining appropriate solutions.

2 National strategy actions

This plan focuses on the actions or parts of actions that will be progressed by the Environment Agency at a national level across England and Wales. For detail on the work which will be progressed at a Regional level, please refer each Regional Action Plan, which have been developed in parallel.

The tables in this section include objectives and actions taken directly from the Water resources strategy that relate to other organisations as well as the Environment Agency. The actions specific to the Environment Agency are highlighted under 'Implementation action' and 'Environment Agency activity'.

We recognise the importance of cost based analysis when considering how to take these activities forward.

Timescales	
Short term	5 years
Medium term	5 to 25 years
Long term	25 years plus



2.1 Adapting to and mitigating climate change

Water resources strategy objective	Ref no for WRS action	Water resources strategy action	Implementation action	Environment Agency activity	Timescale for action
<p>Ecology is more resilient to climate change because abstraction pressures have been reduced and a diverse network of habitats has been allowed to develop.</p>	<p>A4</p>	<p>Further research into the vulnerability of ecosystems and water dependent habitats and species to climate change, and gradual modification of the designations for water dependent nature conservation sites to reflect changing environmental requirements.</p>	<p>Develop our current evidence base on the understanding of ecological responses to abstraction and related pressures. Apply this understanding to climate change scenarios to inform future policy direction.</p>	<p>Set out the Environment Agency's position on environmental protection and adaptation in a changing climate.</p>	<p>Summer 2010 and ongoing</p>
				<ul style="list-style-type: none"> • Develop and communicate our understanding of the effects of climate change to Natural England (NE) and the Countryside Council for Wales (CCW) • Work closely with NE/CCW on future policy development to ensure realistic ambition for the protection of designated water dependent areas under climate change scenarios. • Identify joint working areas to ensure we understand adaptation measures that can be incorporated into ongoing environmental remediation schemes. 	<p>Medium term (5 to 25 years) and long term.</p>

Water resources strategy objective	Ref no for WRS action	Water resources strategy action	Implementation action	Environment Agency activity	Timescale for action
				Provide input to the modelling of hydrological and other scenarios using the UK Climate Predictions 09 (UKCP09). Understand the main areas of change and link to current knowledge about environmental responses.	Ongoing.
The resilience of supplies and critical infrastructure is increased to reduce the impacts of climate change.	A2	Increase the connectivity of water supply infrastructure to improve resilience of existing resources and provide additional security from extreme events.	Develop the Environment Agency's position on water supply resilience, and identify areas for improvement in water supply connectivity and integration.	Work with water companies and Ofwat to achieve a better understanding of the current and future risks to the water supply network and how this risk should be assessed.	Short term
				Develop the Environment Agency's position on water supply resilience.	Short term (Spring 2011)
				Work with regions to review final WRMPs and other available data/information to identify water supply resilience/ connectivity issues.	Short term (Spring 2012)
				Review and update the Water Resources Planning Guideline with the findings from the 'climate change in water supply planning'	Short term (2012)

Water resources strategy objective	Ref no for WRS action	Water resources strategy action	Implementation action	Environment Agency activity	Timescale for action
				science project to ensure our requirements of water companies on water supply resilience take account of UKCP09 climate change scenarios.	Long term
				Work with water companies and Ofwat through future Water Resources Management Plan (WRMP) and business plan cycles to improve water supply resilience and connectivity.	
	A3	Promote efficiency measures and small-scale storage reservoirs for agriculture in the context of the twin track approach.	Continue to promote joint guidance on the construction and development of small scale storage reservoirs and water efficiency.	Work with the National Farmers Union, Regional Development Agencies (or equivalent), the United Kingdom Irrigation Association (UKIA) and others to do this.	Ongoing
Flexible and incremental solutions in water resources management allow adaptation to climate change as it happens.	A1	Compulsorily convert all permanent abstraction licences to time-limited status, to provide the flexibility to respond to climate change.	Work with Defra and the Welsh Assembly Government to evaluate (through consultation), the most appropriate approach for introducing time limits to all licences	Work with Defra and the Welsh Assembly Government to refine and update the cost-benefit analysis for introduction of time limiting.	Short term (Spring 2010)
				Refine policy positions, develop guidance and implement.	In preparation for implementation
Everyone is able to make	A10	All abstractors to	Develop a good	Review the deployable output	Short term (Spring

Water resources strategy objective	Ref no for WRS action	Water resources strategy action	Implementation action	Environment Agency activity	Timescale for action
more informed decisions and choices about managing water resources, protecting the environment and choosing options to avoid security of supply problems.		consider accepting a reduction in the reliability of supply as an option for resolving future deficits. For water companies, achieve an appropriate understanding of the balance between levels of service and non-essential use bans/drought orders.	understanding of the links between levels of service and deployable output. Update the Water Resources Planning Guidelines and Drought Planning Guidelines.	methodology.	2013)
				Update the water resources planning guideline with the findings from the 'climate change in water supply planning' science project (Sections on options appraisal, economics of balancing supply and demand).	Short term (Spring 2013)
				Review the Internal Technical Briefing notes on Deployable Output and Levels of Service.	Short term (Spring 2012)
				Update Drought Plan guidance ahead of the next cycle of production.	Short term
				Continue to support Defra and Welsh Assembly Government to promote the revision of 'hosepipe ban' legislation in the Floods and Water Management Bill as it progresses.	Short term (Spring 2010)
				Review our approach to levels of service seeking views from stakeholders.	Short term (2013)

Water resources strategy objective	Ref no for WRS action	Water resources strategy action	Implementation action	Environment Agency activity	Timescale for action
				Investigate how the reliability of existing abstractions may change.	Short term
				Make information available to potential abstractors on the potential reliability of supplies in catchments. (Mainly for use as part of the abstraction licensing process, but also through the water resources management planning guideline).	Short term
Greenhouse gas emissions from using water resources are minimised and properly considered in future decisions.	A5	Support research to understand how carbon and other greenhouse gas emissions are generated in sectors of abstraction and use (other than public water supply), and wastewater treatment. Research the use of carbon and energy in water quality, and the potential benefits and savings of different management options.	Seek opportunities to understand how greenhouse gas emissions are generated in other sectors of abstraction and wastewater collection and treatment. Look to gather baseline energy - water use data across other sectors information (agriculture, industry and power generation); with view to developing policies and options to reduce energy consumption relating to those abstraction and wastewater activities.	Analyse opportunities for greenhouse gas reduction across sectors, other than the water industry. Evaluate carbon within Restoring Sustainable Abstraction (RSA) for future options appraisal. Review conservation agency standards for carbon reduction to minimise conflict. Review position on rainwater harvesting considering the energy use angle.	Ongoing Short term (By Spring 2011) Short term (By Summer 2010)

Water resources strategy objective	Ref no for WRS action	Water resources strategy action	Implementation action	Environment Agency activity	Timescale for action
				Develop a clear position on how our efforts for reducing carbon emissions associated with abstraction and wastewater treatment should be focused.	Short term (Summer 2010)
				Research the energy use and carbon emissions associated with wastewater treatment and achieving or maintaining water quality standards. Disseminate findings and use to develop guidance	Short term (2010)
	A6	Strengthen the link between energy, waste and wastewater in all sectors of abstraction and wastewater treatment.	Develop an evidence-based, coordinated approach to climate change adaptation and mitigation for key types of abstraction, and wastewater treatment.	Work with key partners and regional teams to strengthen our knowledge of water, energy, waste and wastewater interdependencies.	Short term and ongoing
				Work with key partners to assess and promote practical opportunities for maximising effects of water efficiency and carbon reductions.	Short term and ongoing
				Work with the power industry to	Short term

Water resources strategy objective	Ref no for WRS action	Water resources strategy action	Implementation action	Environment Agency activity	Timescale for action
				develop our understanding of the effects of power generation on future demand for water.	and ongoing
				Use the research outcomes to develop evidence-based guidelines aimed to balance the effect of adaptation measures, carbon emissions and waste and wastewater generation to minimise their environmental impacts.	Short term (2011- onwards)
	A7	Review the efficiency of operating arrangements with major abstractors to ensure that they minimise emissions, whilst maintaining our duties.	Minimise emissions of water related activities and deliver against the Carbon Reduction Commitment.	Develop guidance on how we will review operating arrangements.	Short term (2011)
				Regions undertake reviews of operating arrangements and develop action plans. Head Office play a quality assurance/approval role, as appropriate.	Short term (2012 to 2015)
				Review and update the water resources planning guideline to ensure there is a balance between cost and emission minimisation and security of supply.	Short term (Spring 2012)

Water resources strategy objective	Ref no for WRS action	Water resources strategy action	Implementation action	Environment Agency activity	Timescale for action
	A8	Become an exemplar for the way water resources schemes are operated and managed.	Minimise emissions from water related activities and deliver against the Carbon Reduction Commitment.	Using the guidance developed for reviewing operating arrangements (see A7), coordinate the development of guidance for reviewing our own schemes.	Short term (2011)
				Evaluate Environment Agency transfer schemes and develop action plans for review.	Short term (2012 to 2015)
	A9	Review our policies on ground source heat pumps and hydropower to ensure that we are actively supporting the Governments' carbon reduction and energy production agendas, while maintaining environmental protection.		Review and update the 'Hydropower good practice guide'.	Short term (Summer 2010)
				Develop policy on ground source heat pumps (GSHP).	Short term (Spring 2010)
				Produce GSHP good practice guide.	Short term (Spring 2010)
	A11	Work with Government to understand the implications of UK food policy (e.g. water use, land use, carbon emissions and other	Develop a good understanding of UK food policy on embedded water and its implications on water resources in England and Wales. Establish	Sit on steering group and provide technical input to the Defra project on embedded water.	Short term (2010-2011)
				Gather further evidence to	Short term

Water resources strategy objective	Ref no for WRS action	Water resources strategy action	Implementation action	Environment Agency activity	Timescale for action
		relevant factors)	Environment Agency position on embedded water to enable us to advise Defra and Welsh Assembly Government.	understand the scale of the problem and the level of risk posed to water resources in England and Wales.	(2011)
				Consider knock on implications for the environmental water quality and protection of drinking water sources. Establish further research requirements for this area.	Ongoing



2.2 A better water environment

Water resources strategy objective	Ref no for WRS action	Water resources strategy action	Implementation action	Environment Agency activity	Timescale for action
Abstraction is sustainable, the environment is protected and improved, and supplies remain secure.	B1	Prioritise and target our approach to manage catchments that are 'over committed'.	Develop our approach and evidence to deliver sustainable catchments, including consideration of economics, priorities and options for managing fully committed catchments.	Investigate the need for the transformation and evolution of the RSA programme into an overarching sustainability programme to deliver the requirements of WFD and New Authorisations	Short term (Summer 2010)
				Develop our approach to tackling over committed catchments including consideration of 'no-deterioration' requirements under Water Framework Directive (WFD).	Short term (Summer 2010)
				Review and discuss with Defra and Welsh Assembly Government the financial limits applied to compensation.	Short term (Summer 2010)
				Review, update and communicate our approach to integrated catchments as a whole (RSA, CAMS, WFD and New Authorisations (NA)).	Short term (Summer 2011)

Water resources strategy objective	Ref no for WRS action	Water resources strategy action	Implementation action	Environment Agency activity	Timescale for action
				Update our catchment assessment methodology (CAMS) to better: <ul style="list-style-type: none"> integrate other pressures that are related to water quantity, and improve how the management and transfer of water by water companies is reflected in CAMS and the assessment of water availability in catchments. 	Short term (Spring 2012)
Environmental problems caused by historic unsustainable abstractions are resolved.	B4	Restore wetlands to help rare and threatened habitats and species and to preserve wetland archaeology, subject to water availability.	Identify appropriate processes to improve consideration of wetlands in delivery of RSA and WFD outcomes. Ensure that wetlands are appropriately considered in water resources and water quality policies and processes.	Continue to engage in developing policy and strategy on groundwater dependent terrestrial ecosystems and surface water wetlands.	Ongoing
				Provide support to conservation agencies and those engaged in wetland restoration to identify likely or potential restrictions due to future water availability and/or water quality.	Ongoing
				Identify opportunities for promoting wetland development through measures for sustainable abstraction and wastewater treatment.	Short term (Summer 2011)

Water resources strategy objective	Ref no for WRS action	Water resources strategy action	Implementation action	Environment Agency activity	Timescale for action
				Support understanding of economic benefits/ecosystem service of wetlands.	Short term (2012-2015)
Catchment management is integrated so that impacts on water resources and the water environment are managed together.	B2	Require sustainable drainage schemes to be incorporated into new developments in England.	Promote and encourage the uptake of sustainable drainage schemes, making good use of opportunities to influence.	<p>Promote the use of sustainable drainage schemes in new developments by:</p> <ul style="list-style-type: none"> • Influencing the preparation and content of Regional Spatial Strategies (or equivalent), and accompanying Sustainability Appraisals • Influencing the preparation and content of development plans and accompanying Sustainability Appraisals, together with master plans and similar proposals • Influencing specific planning proposals and potentially those relating to high risk developments at both the planning and pre planning enquiry stage • Influencing proposals for Nationally Significant Infrastructures Projects submitted to the Infrastructure Planning Commission 	Ongoing

Water resources strategy objective	Ref no for WRS action	Water resources strategy action	Implementation action	Environment Agency activity	Timescale for action
				Work with local authorities through our catchment flood management plans to achieve actions related to sustainable drainage schemes.	Ongoing
				Ensure sustainable drainage schemes are considered as part of our consultation response in the inset appointment process for new developments in England	Short term (Spring 2010)
				Communicate current and intended water body status to Local authority for SUDS approval purposes.	2010 onwards
				Work with Defra, Welsh Assembly Government and water industry to address misconnections to the public sewerage system	Short term (Spring 2011)
				Work with Defra and CLG to develop SUDS approval procedures in parallel with development of SUDS standards.	Short term (Spring 2015)
				Work with Defra and Water Industry to facilitate the adoption of Private sewers by the industry,	

Water resources strategy objective	Ref no for WRS action	Water resources strategy action	Implementation action	Environment Agency activity	Timescale for action
				and the delivery of National Sewer Build Standards.	
				Promote the removal of surface waters from existing sewers, allowing it to be dealt with by new SUDs schemes.	Medium term (from Spring 2015)
	B3	Target the use of sustainable drainage schemes in new developments in Wales.	Promote and encourage the uptake of sustainable drainage schemes, making good use of opportunities to influence.	Actions similar to B2 for England in particular in relation to Wales Spatial Plan and Local Development Plans in Wales.	Ongoing
				Promote the removal of surface water drainage from sewers, allowing it to be dealt with by new SUDs schemes. <ul style="list-style-type: none"> Support pilot schemes carried out by Dwr Cymru-Welsh Water. Help influence wider uptake of SUDs in Wales and encourage sharing the approach with other water companies and local government. 	2010-2015
				Ensure sustainable drainage schemes are considered as part of our consultation response in the inset appointment process for new	Short term (Spring 2010)

Water resources strategy objective	Ref no for WRS action	Water resources strategy action	Implementation action	Environment Agency activity	Timescale for action
				developments in Wales.	
	B5	Consider the further expansion of catchment sensitive farming initiatives and other catchment management initiatives to safeguard water resources and drinking water sources.	<p>Provide advice to land managers on efficiency measures where linked to diffuse water pollution within priority catchments, in areas where WFD has identified water resources as an issue.</p> <p>Review possibilities for expansion where aligned with other objectives.</p>	<p>Promote winter storage reservoirs in the context of a twin track approach. These may be part funded through some Regional Development Agencies and promoted by Catchment Sensitive Farming Officers.</p> <p>Provide advice on sustainable irrigation systems.</p> <p>Promote funding for water efficiency measures through Regional Development Agencies and other mechanisms in Wales.</p> <p>Coordinate uptake of information from Water Industry PR09 catchment management schemes to investigate/protect drinking water sources from deteriorating surface water quality. Evaluate potential overlap between water quality trends and surface water availability.</p>	<p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p>

Water resources strategy objective	Ref no for WRS action	Water resources strategy action	Implementation action	Environment Agency activity	Timescale for action
	B6	Develop our science-based understanding of the relationship between water dependent species, flows, levels, morphology and water quality, targeting those areas where the risks and uncertainty are greatest.	Improve the environmental evidence which underpins our regulatory decisions both for new licences and for identifying problems from existing licences. Use to underpin decisions about the best options for achieving environmental outcomes.	Through trials of the Hydroecological validation tool, underpin its use and identify options for future development. Trial DRIED-Up approach and scope future development work	Short term (March 2010)
				Identify research and development of science areas which can support future WR regulatory decisions based on identification of science gaps and 'unexplored' options.	Short term (July 2012)
				Work with NE/CCW towards evidence based criteria for determining water resource linked impacts on protected areas and wetland biodiversity to inform WR regulatory decisions	Short term (2012)
				Identification of benefits from shared development of work areas which includes examination of broader delivery options for environmental outcomes.	Short term (2015)
				Review of success of existing RSA and other restoration schemes and	Short term (2013)

Water resources strategy objective	Ref no for WRS action	Water resources strategy action	Implementation action	Environment Agency activity	Timescale for action
				agree appropriate mechanism for ongoing post-project appraisal.	
				Ensure appropriate monitoring and data to underpin decisions is agreed and embedded within monitoring programme and RSA schemes.	Short term (2012)



2.3 Sustainable planning and management of water resources

Water resources strategy objective	Ref no for WRS action	Water resources strategy action	Implementation action	Environment Agency activity	Timescale for action
The twin track approach of resource development with demand management is adopted in all sectors of water use	C2	(RDAs to) allow access to funding for local water efficiency and resource development initiatives for agriculture in areas where water resources are under pressure.	See A3	See A3	See A3
	C5	Produce and deliver water reduction targets for different categories of use (for example, the food industry already has a target of a 20 per cent water demand reduction by 2020).	Review current water reduction initiatives and policy tools (e.g. industry sector plans; resource efficiency delivery plans) and set targets wherever feasible for major process industries.	Review Resource Efficiency Appraisal and Development (READ) and other water use data and incorporate water reduction initiatives in Resource Efficiency delivery plans for key industry sectors.	Short term (2011)
				Work with WRAP, industry stakeholders and advisory bodies to ensure water reduction opportunities are optimised in industry.	Short term (2015)
Proactively look for opportunities to influence major process industries, encouraging the setting of long term targets.	Ongoing				

Water resources strategy objective	Ref no for WRS action	Water resources strategy action	Implementation action	Environment Agency activity	Timescale for action	
	C14	Complete a review of the way the water industry is funded – instead of water companies being rewarded for the amount of water they sell, introduce incentives for reducing the amount of water provided, and for improving the quality of services provided.	Further review of the way the water industry is regulated and funded with particular emphasis on opportunities for reform which will align the incentives of the water industry with the outputs required for sustainable water management under an increasingly uncertain future.	Continue to challenge whether the existing structure of the water industry is appropriate to enable the water industry to respond to future pressures.	Ongoing	
				Promote debate in this area, seek to build the evidence base and understanding on the most appropriate future structuring of the water industry.	Ongoing	
	C17	Establish a Water Efficiency Commitment for water companies which includes mandatory water saving targets. Water companies to then implement these targets.	Work with Defra and Welsh Assembly Government and regulators to develop the requirements of the proposed mandatory water efficiency scheme recommended in the interim report of the Walker Review of charging.	Review recommendations from the Walker review on a Water Efficiency Scheme and work with Defra and Welsh Assembly Government on its implementation.	Short term (2010)	
				Working with Ofwat, collect evidence on the current water efficiency targets to feed into the development of any new scheme.	Short term (2015)	
	In England, the average amount of water used per	C16	In areas where water resources are under	Influence water efficiency standards	Produce internal guidance that will support Planning liaison colleagues	Short term (2012)

Water resources strategy objective	Ref no for WRS action	Water resources strategy action	Implementation action	Environment Agency activity	Timescale for action
person in the home is reduced to 130 litres each day by 2030.		pressure, adopt water efficiency standards in planning conditions that are tighter than the default standards identified in building regulations.	in local planning that reflect water resources availability.	in responding to consultations.	
				Continue to work with CLG to carry out 'pilots' as part of Local Development Frameworks in order to promote water efficiency in water stress areas.	Short term (2010)
The Environment Agency targets and adapts its approach to reflect the location and timing of pressures on water resources	C8	Take a more proactive role in water resources planning across England and Wales in order to optimise resource use to meet demand.	Taking account of our existing powers, undertake review of options before identifying the appropriate approach.	Review the role of the Environment Agency in identifying and assessing resource development and demand management options.	Short term (2014)
				Work with Defra, Welsh Assembly Government and Ofwat to review the first round of WRMPs and Drought Plans to identify improvements for future plans.	Short term (Summer 2010)
	C9	Use existing powers to identify opportunities for bulk supplies between companies, to identify where water resources need to be re-allocated between companies and where operating arrangements can	Within the context of our existing powers, review and update our policies on bulk supplies, licence reallocation and water resource management	Review our policies on the use of our existing powers on bulk supplies, licence reallocation and water resources management arrangements following publication of the recommendations from the Cave Review and the conclusions of the Government consultation.	Medium term

Water resources strategy objective	Ref no for WRS action	Water resources strategy action	Implementation action	Environment Agency activity	Timescale for action
		be used.	arrangements.		
				Review the water resources planning guideline to take account of any policy updates on bulk supplies, licence re-allocation and water resources management arrangements.	Spring 2012
				Continue to work with the Water Resources in the South East group on resource use and allocation.	Short and medium term
				Work with Regions and Areas to identify areas where existing resources could be shared and/or used more effectively.	Long term
In England, water companies implement near-universal metering of households, starting in areas of serious water stress.	C1	Increase levels of metering with suitable tariffs to improve water and economic efficiency whilst protecting vulnerable groups.	Work with the water industry to implement metering in areas of serious water stress in England and to develop the evidence base for metering and tariffs (please also see action D3).	Work with the water industry to understand the role that intelligent metering can play in the water industry by being an active member of the Intelligent Metering Initiative.	Ongoing
				Work with Ofwat and others to develop a method for valuing water to help us to achieve better use of water resources - including efficient use and allocation of water.	Short term (2012)

Water resources strategy objective	Ref no for WRS action	Water resources strategy action	Implementation action	Environment Agency activity	Timescale for action
				Look at a range of possible economic instruments and how they might be implemented.	
				Work with DECC to ensure the water and energy sectors' infrastructure and protocols for smart metering are integrated.	Short term (2013)
				Work with water companies through the water resources management plan process and business planning process to influence companies to achieve appropriate levels of metering.	Short term Spring 2010 (current plans) 2015 (future plans)
Leakage from mains and supply pipes is reduced.	C6	Further leakage control based on alternative methods of setting targets that better reflect the costs to society and the environment.	Work with the Ofwat and the water industry to ensure that future leakage targets reflect the true value of water and innovation and technology in leakage control.	Conduct collaborative work with Ofwat and other stakeholders considering future methods of leakage regulation prior to next periodic review.	Short term (2012)
	C7	Explore the merits of a change of ownership of supply pipes so that water	Work with the water industry to explore the merits of	Conduct research, in collaboration with the water industry on the costs/benefits of switching ownership	Short term (2015)

Water resources strategy objective	Ref no for WRS action	Water resources strategy action	Implementation action	Environment Agency activity	Timescale for action
		companies have accountability to achieve a reduction in supply pipe leakage.	changing ownership of supply pipes.	of supply pipes to water companies. This research should build on the recent work conducted by UKWIR.	
				Provide advice to Defra and Welsh Assembly Government on adoption of supply pipes following further research on the merits of supply pipe adoption.	Short term (2015)
New and existing homes and buildings are more water efficient.	C3	In areas where water resources are under pressure, include measures that support water neutrality where new development is planned and require developers to produce water cycle studies where housing developments are proposed.	Work with national, regional and local partners to highlight water resource capacity issues and promote the preparation of water cycle studies where significant housing growth is proposed. Use our evidence and analysis to encourage the adoption of higher sustainable building standards with a view to achieving water neutrality where appropriate.	Work with HCA, CLG, Defra, local authorities and other partners to promote the preparation of water cycle studies where significant housing growth is proposed.	Short term (2010-2015)
				Contribute evidence, advise on sustainable approaches and quality assure outputs as members of water cycle study steering groups.	Short term (2010-2015)
				Work with partners to ensure that standards in the Eco-Towns PPS are adopted including aspiring to water neutrality in water stressed areas.	Short term (2010-2015)
				Support CLG and the HCA in the Thames Gateway to pursue water	Short term (2010-2011)

Water resources strategy objective	Ref no for WRS action	Water resources strategy action	Implementation action	Environment Agency activity	Timescale for action
				neutrality as part of Eco-quarter proposals.	
				Review Water Resources Planning Guideline to ensure that water neutrality is appropriately covered.	Short term (2012)
				Work with water companies through the water resources management plan process and business planning process to influence companies to introduce appropriate levels of metering in areas where water resources are under stress.	Spring 2010 (current plans) 2014/2015 (future plans)
	C4	Identify water efficiency standards for non-household buildings at a regulatory level and a voluntary code beyond that.	Work with stakeholders to develop the approach for implementing non-household water efficient design using existing fitting based standard.	Support CLG on their review of standards for non-households.	Short term (2011)
				Develop our position on existing non-household standards, allowing flexibility to use tighter standards where required.	Short term (2011)
				Identify water efficiency standards for non-household buildings at a regulatory level and a voluntary code beyond that.	Short term (2011)

Water resources strategy objective	Ref no for WRS action	Water resources strategy action	Implementation action	Environment Agency activity	Timescale for action
	C15	Increase mandatory standards for fixtures, fittings and appliances to improve the water efficiency of homes and businesses	Work with Defra and Welsh Assembly Government to transform the market to water efficient goods and appliances.	Work with Defra and Welsh Assembly Government to help influence the content of the Water Supply (Water Fittings) regulations to ensure that they sufficiently cover water efficiency.	Short term (2011)
				Continue to support CLG on their review of the water element of the Code for Sustainable Homes.	Ongoing
				Advise Defra and Welsh Assembly Government on the potential for a set of challenging, fittings based regulations, to drive performance and innovation in homes and businesses beyond the requirements of the revised Water Supply (Water Fittings) regulations.	Long term
				Support research on market transformation of water fixtures and fittings.	Long term
Water resources are allocated efficiently and are shared within regions where there are areas of surplus.	C11	Work to remove barriers to licence trading within the water resources regulatory framework.	Work with Defra, WAG, Ofwat and others to identify the barriers to licence	Work with Defra, WAG and Ofwat to: <ul style="list-style-type: none"> Establish the rules for trading abstraction licences Investigate the measures for 	Short term 2010/11 to scope work

Water resources strategy objective	Ref no for WRS action	Water resources strategy action	Implementation action	Environment Agency activity	Timescale for action
			trading. Review the options for removing these barriers where possible and implement changes as appropriate.	<p>achieving sustainable levels of abstraction across catchments using new tools and the ways in which we could use those tools together</p> <ul style="list-style-type: none"> Identify ways of increasing information availability for people who want to trade licences. 	and establish options
<p>Water resources are allocated efficiently and are shared within regions where there are areas of surplus.</p> <p>The needs of wildlife, fisheries, navigation and recreation, as well as the needs of the environment and abstractors, are fully taken into account when allocating water resources.</p>	C12	Further investigate options for an alternative approach to how we allocate water resources within a catchment.	Work with Defra and the Welsh Assembly Government to re-examine alternative approaches to how we allocate water.	Assess how we currently allocate water and consider whether or not we can continue to meet the needs of society and the environment in all catchments in England and Wales.	Short to medium
			Work towards developing a consistent framework that allows a flexible and 'better regulation' approach to managing areas where pressures on water resources differ.	Further consider alternative options (and recommendations from the Cave Review) and the applicability of these approaches to catchments across England and Wales.	Short to medium
				Work with Defra and Welsh Assembly Government to evaluate (through consultation), the most appropriate approach for introducing time limits to all licences (See Action A1).	

Water resources strategy objective	Ref no for WRS action	Water resources strategy action	Implementation action	Environment Agency activity	Timescale for action
Water resources are allocated efficiently and are shared within regions where there are areas of surplus.	C13	Consider how different structural models for the water industry can reap benefits for the environment and customers		Consider Cave recommendations on changes to industry structure and a simplified mergers procedure, in this area in conjunction with Ofwat, Defra and Welsh Assembly Government.	Short term (2010/11)
				Work with Defra and the Welsh Assembly Government to investigate alternative structural models for the industry and how each variation could help or hinder water resource management, with particular reference to the water stressed south east of England.	2009



2.4 Water and the water environment are valued

Water resources strategy objective	Ref no for WRS action	Water resources strategy action	Implementation action	Environment Agency activity	Timescale for action
Water pricing for the abstraction and use of water acts as an incentive for the sustainable use of water resources.	D4	Change the abstraction charges system to reflect the value of water, incentivise efficient use and allocation and allow us to manage water resources effectively in the face of future challenges	Understand the policy objectives we (and others) want to meet through valuing water and how best we can achieve these.	Undertake a review and appraisal of the range of economic instruments available for valuing water and how these may be built into a future charging scheme.	Short term (2010/11)
				Make recommendations to Defra and Welsh Assembly Government for changes to the charging scheme where appropriate, following consultation.	Short to Medium term
	D5	Broaden the expenditure base of abstraction licence income to take on additional responsibilities for upstream water resources management (recognising the interaction between water resources, land management and water quality).	Understand the wider integrated catchment management activities we need to carry out and how best we might fund these.	Undertake a review of the opportunities available for broadening the expenditure base of abstraction licence income.	Short term (2010/11)
Examine how Water Resources funds can deliver broader environmental outcomes.				Short term (2011)	

Water resources strategy objective	Ref no for WRS action	Water resources strategy action	Implementation action	Environment Agency activity	Timescale for action
	D1	Introduce further incentives for the purchase and fitting of water efficient equipment and appliances.	Conduct appropriate research on incentives and means of influencing customer behaviour to inform policy. Work with stakeholders to implement findings.	Conduct an international review of existing incentives and look at how far they have been adopted and what is required to fill the gaps.	Medium term (2020)
	D6	Improve, and widen the range of the water efficiency labelling system introduced by the Bathroom Manufacturers' Association for appliances that use water.		Work with Bathroom Manufacturers' Association (BMA), Waterwise and other stakeholders to widen and promote existing scheme.	Short term (2014)
				Advise Defra and Welsh Assembly Government on whether a mandatory scheme would be appropriate.	Short term (2015)
Innovative tariffs are adopted by water companies to maximise savings and minimise issues of affordability.	D3	Implement variable tariffs to provide the incentive for demand management, whilst mitigating against affordability issues.	Work with the water industry to develop the evidence base for tariffs.	Research the impact of increased levels of metering and innovative tariffs on customer bills.	July 2009
				Support research and action within the water industry, Consumer Council for Water, Defra, Welsh	Ongoing

Water resources strategy objective	Ref no for WRS action	Water resources strategy action	Implementation action	Environment Agency activity	Timescale for action
				Assembly Government and Ofwat to address water affordability.	
				Develop an 'evidence base' resource on water tariffs based on the trials conducted by water companies.	Short term (2015)
				Host tariff trial workshops to provide a platform for sharing knowledge in the water industry on tariffs.	Short term (2012)
				Work with Ofwat to develop a methodology for valuing water to ensure that demand management options are considered fairly against supply side schemes in water resources management plans.	Short term (2012)
				Conduct/support research on customer behaviour response to tariffs/imperative bills to provide the evidence to the water industry on how	Short term (2015)

Water resources strategy objective	Ref no for WRS action	Water resources strategy action	Implementation action	Environment Agency activity	Timescale for action
				difference tariffs provide and incentive for water efficiency.	
Innovative technology is developed to improve water efficiency by all water users.	D2	Significantly increase innovation within the water industry by 2015 and allow funding for the increased level of investment to meet the challenges of climate change.	Work with Ofwat, Defra and Welsh Assembly Government to identify opportunities for increased innovation in the water industry.	Consider Cave recommendations on innovation in conjunction with Ofwat, Defra and Welsh Assembly Government.	Short term (Spring 2010)
			Work with water companies and Ofwat to improve innovation.	Work with Water Companies and Ofwat through future WRMP and business plan cycles to drive companies to consider innovative solutions.	Long Term

3 Implementing the actions

Many industries, farmers, water companies and other individuals and organisations have an interest in water resources management. It is essential that all organisations work together as there is no single solution to the challenges that we face. We will work hard to ensure that our partner organisations are fully involved in taking forward the actions identified in this plan.

We will also continue to work closely with Defra and the Welsh Assembly to implement the activities set out in this plan.

While there is currently enough water for people and the environment, it is important that people use water efficiently and value water dependent environments. It will take a great deal of work to ensure that we manage water resources in a way that will allow people to enjoy and protect the environment for future generations.

Glossary of terms

Abstraction – Removal of water from a source of supply (surface or groundwater).

Operating arrangements – An abstraction licence can only define how water will be abstracted, therefore we have separate operating arrangements associated with complicated licences to ensure that other conditions, such as compensation flows, are met.

Sustainable Drainage Systems (SuDS) – Surface water drainage systems that take account of water quantity, quality and amenity issues. These systems are more sustainable than conventional drainage methods because they manage rainfall runoff, protect or enhance water quality by managing pollution at its source, provide a habitat for wildlife, and are sympathetic to the environmental setting and the needs of the local community.

Twin track approach – An approach to planning that balances demand management, such as leakage control and increased metering, with resource development, such as building new reservoirs.

Water neutrality – The total demand for water in a pre-defined area does not increase after a new development is built. This is achieved by offsetting the demand from the new development by making existing homes and buildings in the wider area more water efficient.

List of abbreviations

BMA	Bathroom Manufacturer's Association
CAMS	Catchment Abstraction Management Strategies
CCW	Countryside Council for Wales
CLG	Communities and Local Government
DECC	Department of Energy and Climate Change
GSHP	Ground Source Heat Pumps
HCA	Homes and Communities Agency
HD	Habitats Directive
NA	New Authorisations
NE	Natural England
PR09	Periodic Review 2009
RAP	Regional Action Plan
RBMP	River Basin Management Plan
READ	Resource Efficiency Appraisal and Development
RES	Regional Economic Strategy
RSA	Restoring Sustainable Abstraction
RSS	Regional Spatial Strategy
SUDs	Sustainable Urban Drainage Systems
UKCP09	UK Climate Projections 2009
UKIA	UK Irrigation Association
UKWIR	UK Water Industry Research
WAG	Welsh Assembly Government
WFD	Water Framework Directive
WRMP	Water Resource Management plan

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