



Towards sustainability

2003-2004

(UK water industry Sustainability Indicators 2003/2004)

foreword



I welcome this latest report on the water industry's sustainability indicators. Following the publication of the UK Sustainable Development Strategy by my Department it is timely to focus on the contribution of the water industry, one of the key sectors in delivering sustainability.

The publication of reports such as this help us to see how far we have come and give credit to those responsible for the progress made, especially in the quality of the water environment. But, quite properly, the indicators also highlight the issues of concern, [for example on leakage] where improvements in performance need to be made and maintained.

The report shows the breadth of the sustainable development agenda. Delivering a better quality of life is about society and economics as well as directly about securing a better environment. I welcome the attention of this report to the industry's roles as social provider and employer and as a customer service. In the wake of new, higher price limits for water companies it is timely to address the issue of water affordability, on which the Government will continue to work alongside industry and regulators.

Water policy also faces new challenges, in particular the effects of climate change, the new approaches called for by the water framework directive and the related debate about the responsibilities of the water industry and other sectors for tackling diffuse pollution.

Meeting future challenges will require all of us to work together with sustainability at the heart of all that we do. I am sure that the industry will contribute to make sustainability a reality.

Elliot Morley MP

Minister for Environment and Agri-Environment

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introduction

The companies and authorities that make up the UK water industry provide reliable and safe water supplies and sewerage services to UK citizens. The task is underpinned by strong regulation that covers all aspects of the industry's core business, drinking water quality, wastewater quality and price control. The industry also has much wider responsibilities: to employees, shareholders, suppliers and contractors, neighbours, the community in general, and the environment.

By supplying clean water and by collecting and treating sewage, the industry is helping to meet public health needs today and, through its infrastructure, for future generations. These activities also support a huge range of other businesses and employ a large direct and indirect workforce. Through its engagement with other stakeholders, the industry helps sustain and enhance local communities. The water industry remains at the forefront of sustainability.

The goal of sustainability is firmly at the core of the water industry's policies and objectives. Water operators have, through Water UK, committed themselves to providing sustainable water and sewerage services by:

- Having effective governance structures, management and operating procedures.
- Enhancing the environment and minimising impacts whilst meeting regulatory requirements.
- Adding value through engagement with customers and their communities.
- Ensuring a fair, safe and rewarding working environment to maximise workforce potential.
- Investing in assets to secure operational efficiency and optimise performance.
- Maintaining the long-term financial viability of the industry by embedding sustainability in the decision making process.

Scottish Water's duty in relation to sustainable development is enshrined in the law (the Water Industry (Scotland) Act 2002) that set it up: in exercising its functions Scottish Water must "act in a way best calculated to contribute to sustainable development and ... have regard to any guidance issued by the Scottish Ministers (under preparation)" (Section 51).

This report is the second looking at all aspects of sustainability and how the water industry is progressing towards it. How and why sustainability indicators for the water industry were developed is explained in last year's report "Sustainability: Broadening the Perspective" (<http://www.water.org.uk/home/policy/statements-and-responses/sustainabi-080604-1>), which builds on the previous 5 years' reporting of the industry's progress on environmental sustainability.

The UK water industry

The UK water industry consists of 12 water and sewerage service providers and 13 water suppliers. In England and Wales, the companies are private, several as subsidiaries of international enterprises. Scotland and Northern Ireland each have a single water and sewerage service provider, in public ownership.

The UK water industry collects, treats and then supplies over 16 billion litres per day of high quality water to domestic and commercial customers and then collects and treats over 10 billion litres of the resulting wastewaters, returning them safely to the environment. To do this, the industry

- abstracts from over 1,500 boreholes, 650 reservoirs and at 600 river abstraction points, taking two thirds of its water from surface sources and a third from groundwater,
- operates some 2,500 water treatment works,
- has over 350,000 km of water mains,
- has a further 350,000 km of sewers to collect sewerage,
- operates some 9,000 sewage treatment works and discharges the treated effluent back to the environment, and
- has over 25,000 intermittent discharges from its wastewater systems.

There are many geographical, cultural, geological, climatic and other variations that affect the industry's nation-wide operations. Regional and structural differences can be very significant. Every year around £3 billion is invested to improve water supply and sewerage services. The industry employs around 35,000 people directly and many thousands more through the contractors and suppliers it uses.

The industry works together through Water UK on policy and strategy issues of common interest. Water UK represents its members on Eureau, the European association for the water industry. Water UK and its members participate fully in international water organisations.

The International Year of Freshwater

2003 was The International Year of Freshwater. Realising that the West alone cannot deliver sustainable solutions for the rest of the world, Water UK and its members have contributed by building partnerships and helping with capacity building. Water UK worked with stakeholders like the National Farmers Union, the Consumers Association and the Housebuilders Federation on water issues. In Europe, it promoted closer links with water professionals in Eastern Europe. At a global level, it worked to provide the industry response and input to initiatives such as the EU Water Initiative and the Millennium Development Goals for Water and Sanitation. It worked with colleagues in Africa and Asia to develop capacity building initiatives.

Regulation

The industry is heavily regulated. Many regulations that directly affect the water industry are based on EU Directives – for example, drinking water, urban wastewater treatment, sewage sludge, groundwater protection, and health and safety at work. Others, for example economic regulation, are UK specific.

Certain regulators are also specific to the sector. The Office of Water Services (Ofwat) in England and Wales has the duty to protect water customers' interests whilst at the same time ensuring that the water companies carry out their functions properly and have access to sufficient

finance to do so. It carries out a periodic review of prices every five years that agrees investment and sets limits on customers' water and sewerage bills. The Water Commissioner for Scotland has a similar function in approving Scottish Water's proposed investment plans for the next four-year period.

Drinking Water Inspectorates exist in England and Wales, in Scotland and in Northern Ireland to ensure that the quality of tap water meets statutory standards.

The water industry is the major "client" of the agencies responsible for environment protection. The Environment Agency in England and Wales regulates water abstractions and the industry's discharges to water, air and land. The Scottish Environment Protection Agency carries out a similar function for discharges in Scotland. The Environment and Heritage Service does so in Northern Ireland. Other regulators, for example the Health and Safety Executive, are common across the economy. English Nature and English Heritage have responsibilities for the natural and built environment in England: similar bodies have such responsibilities in other parts of the UK, for example Scottish Natural Heritage.

Indicators for 2003/2004

This report looks at the water industry's performance in relation to matters that are regulated and those that go further than regulations demand. It is a self-appraisal, measuring shortfalls as well as achievements – but with a strong industry commitment of movement over time towards sustainability.

The baseline for quality in the products and services that

the industry provides is already very high. The major achievement will often be to maintain the standards already achieved more efficiently and sustainably, in the services supplied and the environment that the water industry helps to protect.

This report indicates the water industry's progress towards sustainable development for 2003/2004. It is based on data from 24 operators. Cholderton Water, the smallest water supplier with some 2,000 customers, has not been asked to supply data.

Confidence levels quoted are based on the quality and completeness of the data provided.

Some indicators are still under development. This is being pursued through 2003 and 2004 in research commissioned by UK Water Industry Research Ltd, the company that is responsible for the water industry's collaborative research programme.

Individual water operators put a great deal of information into the public domain, through annual reports and reports on environmental performance and drinking water quality. The examples given in this report are illustrative: all companies have good stories to tell. These, and further details of many of the good practice examples and other information used in this report, can be accessed through water operators' websites. Government and regulators also make public information relating to the water industry's activities. A copy of this report and other related information that Water UK regularly publishes are available from Water UK's website. A list of relevant websites is given in Annex I.

summary

Theme: Governance, Strategic Planning and Management

Aspect	Indicator	Result 2002/2003	Result 2003/2004	Progress Towards Sustainability
Strategic Planning	G1 Value of investment in industry wide research	£2.886m	£3m	↑
Management	G2 No. operators with management systems for sustainability	Env: 20 Qual: 22 H&S:24	Env: 20 Qual: 20 H&S: 24	↔
	G3 Responsible contracting	**	**	
	G4 Contracts paid in accordance with agreed terms	75%	65%	↓
Governance	G5 No. of convictions*	96	71	↑

Theme: Environment (Natural Capital)

Aspect	Indicator	Result 2002/2003	Result 2003/2004	Progress Towards Sustainability
Materials and waste	N1 Use and management of key materials	**	**	
	N2 Sludge, total - reused	1.23m tonnes 72%	1.3 m tonnes 77%	↑
	N3 Excavated material diverted from landfill	>3m tonnes 53%	> 6m tonnes 64%	↑
	N4 Energy used, total - supply 1MI water - treat 1MI sewage	8,160 GWh 602 kWh 814 kWh	8,030 GWh 663 kWh 645 kWh	↑ ↓ ↑
	N5 Renewable energy - used - generated	6.4% 343 GWh	6.1% 345 GWh	↑ ↓
	N6 Emissions of greenhouse gases - CO ₂ from fixed site - CO ₂ from road transport	** 0.059 tonnes/person 0.00167 t/p	** 0.057 tonnes/per 0.0026 t/p	↔ ↓
Water	N7 Sustainable management of water resources	**	**	
	N8 Compliance with abstraction licences	37 days' exceedance	512 exceedances 3,750 MI excess	↓
	N9 Rivers with very good to fair - chemical water quality - biological water quality	95% 95%	95% 95%	↔

¹The indicator for 2003-04 records the total number of exceedances, rather than the number of days on which exceedances occurred, as for 2002-03. The data collection methodology has changed which has meant it is now possible to be more specific about exceedances. The overall level of exceedance has not altered significantly.

Aspect	Indicator	Result 2002/2003	Result 2003/2004	Progress Towards Sustainability
	N10 Bathing waters* - Mandatory - Guideline standards	97.8% 74.9%	98% 75%	↔ ↔
Land	N11 Management of biodiversity	**	**	
	N12 Status of SSSIs on water industry landholdings - favourable - stable/recovering	20% 66%	14% 74%	↓ ↑

Theme: Society (Social Capital)

Aspect	Indicator	Result 2002/2003	Result 2003/2004	Progress Towards Sustainability
Access to water services	S1 Security of supply index score	100 to -256	100 to -24	↑
	S2 Households with water bills > 3% income No of vulnerable customers	9% 5,852	9% 7,202	↓
Demand Management	S3 Water demand - domestic - non-domestic Total water consumed	149.1 litres/person/day 1.56 l/£GDP 13,068 MI/d	150.3 l/p/d 1.59l/£GDP 12,886 MI/d	↓ ↔ ↔
Quality of service	S4 Tests complying with drinking water standards*	99.82%	99.825%	↔
	S5 No. of payments made against Guaranteed Standards Schemes	31,401	37,082	↓
Community investment	S6 Value of community investment	> £5m	> £11m	↑

Theme: Employees (Human Capital)

Aspect	Indicator	Result 2002/2003	Result 2003/2004	Progress Towards Sustainability
Human capital level	H1 Employee turnover rate	7.6%	9.7%	↓
	H2 Investment in employee training and development	£400/person 18hrs/year	£400/person 27hrs/year	↑
Workforce diversity	H3 Age	10% 18-24 years 68% 25-49 22% 50-64	6.6% 18-24 years 65% 25-49 28% 50-64	↔
	Gender	23% female	26% female	↑
	Ethnic background	>1.3%	>2.5%	↑

Aspect	Indicator	Result 2002/2003	Result 2003/2004	Progress Towards Sustainability
Working Conditions	H4 Workforce with access to formal bargaining	98%	98.6%	↔
	H5 Average no. of days lost through absence	7.3 days/person/year	9.3 days/person/year	↓
	H6 Reported accidents	1,225/100,000 employees	1,357/100,000 employees	↓

Theme: Assets (Manufactured Capital)

Aspect	Indicator	Result 2002/2003	Result 2003/2004	Progress Towards Sustainability
Serviceability	M1 Properties with low pressure supply	30,744***	23,408	↑
	M2 No of properties with interruptions to supply	1,062,408 (3.67%)	845,350 (3.69%)	↑
	M3 Population equivalent connected to compliant waste water treatment work	86.6%	93.7%	↑
	M4 Sewer flooding - properties at risk - flooded	0.046% 0.02%	0.047% 0.016%	↔
	M5 Loss from supply network	4,981 MI/day	5,023 MI/day	↓
	M6 Investment in assets - water supply - waste water	£1.67 bn £1.63 bn	£1.91 bn £2.39 bn	↑

Theme: Finance (Financial Capital)

Aspect	Indicator	Result 2002/2003	Result 2003/2004	Progress Towards Sustainability
Financial viability	F1 Operating cashflow - amount of interest paid	£4,415m - £279m	£4,478m -£776m	↑ ↓
	F2 Sustainability accounting	**	**	

Key

- * Calendar year (2003) results. All others are financial year 2003/2004
- # Environment and public health only
- ** Under development
- *** Recalculated from new data
- ↑ ↓ ↔ Denotes change from 2002/2003; improving, worsening, static

THE INDICATORS

Theme G – Strategic Planning, Management and Governance

This set of indicators gives information on engagement, accountability and governance procedures in the UK water industry. They show the extent to which the industry has adopted voluntary codes of corporate governance and how fully it complies with its statutory duties.

Engagement, accountability and governance procedures in the water industry

Planning

The water industry is a long-term industry, with infrastructure having lifespans of 25 years and often much more. Water resources are planned over a 25 year horizon. Through Water UK the industry develops policy to try and ensure that a long-term approach is supported by Government policy. Members work together on issues facing the industry to develop solutions and ideas that will bring sustainable responses from those who regulate it. Planning for climate change and population shifts into areas already under severe water resource constraints are two pressing problems. As a successful industry the essential services provided are often taken for granted, not just by customers but also by Government Departments outside of the Department for Environment, Food and Rural Affairs (Defra), the water industry's sponsoring Department. Part of Water UK's activity involves reminding other Departments about the impact on water of a wide range of Government policy.

Governance

The water and sewerage operators are highly accountable to their customers, investors, employees and the community. They have been given a licence to operate, in a sense in trust, by the Government (through the industry's economic regulator), which could be withdrawn if they fail to meet the regulatory contract. Operators are also classified as "public bodies" for certain environmental legislation. There is a transparency both in terms of putting a wide range of information into the public domain but also in dealings with the regulators and Government.

In Scotland and Northern Ireland, where water services remain in the public sector, similar principles of governance apply. All operators abide by codes of best practice on corporate governance, such as the Turnbull code, and in many cases go further than that required by statute. They also have a strong sense of their place in the community and as such engage in a range of activities going far beyond any legal requirements. The scope of this work was described in Water UK's 2003 publication "CSR in the water industry".



G1 Investment in research

**Value of Investment in UKWIR
Industry-Wide Research = £3M**

Confidence: High

The water industry continually looks for new technologies, techniques and procedures to improve its performance and for ways of minimising and managing risks to its operations, now and in the future. Research plays a key role in securing these goals. As these are common goals throughout the industry, it is most efficient to pursue much research collaboratively. UK Water Industry Research Ltd (UKWIR) provides the framework for the procurement of a common research programme for UK water operators on 'one voice' issues.

Aim

This indicator is a guide to the collaborative investment that the industry is prepared to make to try to find common solutions to industry-wide problems or issues.

Results

In 2003/2004 all UK water operators contributed a total of £3 million to UKWIR. Collaboration with Government bodies and agencies, and external sponsorship, doubled the total value of this research.

The indicator does not include R&D investment that takes place within and between individual companies. Overall, research and development in the water sector is 0.35% of income from customers, better than or equivalent to other utilities.

UKWIR accounts are externally audited and confidence in the indicator is high.

Best Practice

- UKWIR continued to arrange research into key issues affecting the water industry, notably into climate change, wastewater treatment, sewage sludge, water mains and sewerage services and drinking water quality. The research helped the industry to improve its understanding of, and optimise control over, its operations to minimise their affects on the environment and society
- In their early life most assets require little capital maintenance but, for short to medium life assets with life expectancies of the order of twenty years, the need for increased capital maintenance takes effect. To help companies to quantify this effect, UKWIR supported a fast track project "Capital Maintenance Planning: Implications for Maintenance of Growth in the Asset Base". This delivered an "Asset Life Model" that UKWIR members could apply to their business plans.
- The Urban Pollution Management (UPM) Research Programme, funded by FWR and others, including UKWIR, won the 2003 prestigious Chris Binnie Award for Sustainable Water. The research programme produced a manual to manage and models to assist in the planning of urban storm sewage discharges.

G2 Management of environmental and sustainability issues

Number of utilities with management systems for addressing:

Environmental issues = 19

Quality issues = 20

Health and safety issues = 23

Confidence: High

Environmental management system standards have been developed to ensure that environmental impacts are fully evaluated and addressed in management procedures and practices. Two internationally recognised environmental management systems - those prescribed by ISO 14001 and the EU Eco-Management and Audit Scheme (EMAS) - require an organization to take a systematic approach to minimize harmful effects on the environment caused by its activities and to achieve continual improvement of its environmental performance.

ISO 9001 sets out similar requirements for quality management - what an organisation needs to do to fulfil customers' quality needs and applicable regulatory requirements; to enhance customer satisfaction; and to achieve continual improvement in its performance. OHSAS 18001 provides guidelines for an occupational health and safety management system, to enable an organisation to control its occupational health and safety and improve its performance.

These formal standards are compatible and together suggest a management framework starting with a policy that can include principles of sustainable development. The framework then recommends a clear set of objectives, senior management commitment, a commitment to continual improvement, and systems in place for monitoring performance and for raising environmental awareness. Formal certification and verification to the standards can be gained from awarding bodies.

Other business management systems also exist to provide a systematic and structured way for an organisation to measure and monitor its progress towards the goals of its own company policy.

Aim

This indicator shows how many operators in the water sector adopt a structured process for the responsibility and control of their core activities in line with accepted standards.

Results

In 2003/2004, 83% of water operators (representing 95% of the UK population) had a formal environmental management system in place, half of which had been externally verified. This applied to key operating sites rather than to all activities. Conversely, all operators had structured systems for protecting the health and safety of employees right across the business, and these were mainly internal. Most (serving 95% of the UK population) took a formal approach to quality management in selected areas of business.

UK operators made a full response to this enquiry and confidence in the data is high.

Best Practice

All operators have adopted best practice to a substantial extent through the uptake of formal management systems in key areas of business.

G3 Responsible contracting

Indicator under development

The water industry uses many products and services in carrying out its core business – furniture for its offices, chemicals for its treatment works etc. There are normally several companies that offer the same or suitable alternative products. If the water industry is to move further towards sustainability, it needs to ensure that the product or service providers that it chooses also conform as far as practicable to the principles of sustainability, for example by accessing renewable raw materials for the products they provide. The water industry needs to establish sustainable development criteria for procurement and to explore opportunities to engage suppliers providing the least-cost sustainable products.

Aim

This indicator will explore the nature of the industry's management of suppliers and products.

Best Practice

- Water operators have regular dialogue with suppliers. Southern Water, for example, met many of its suppliers to obtain regular updates on the service they supply and to agree ways to improve the partnership. This can include their providing product volume data, efficiency information and details on progress with environmental management. Statements of commitment to environmental performance are included within contractual agreements that follow these discussions, assisting Southern Water to manage its environmental risks through tracking its exposure to supplier-risks. United Utilities uses workshops to work with its suppliers. It takes a whole-life cost approach to capital investment decisions to ensure lifetime costs and impacts, such as energy or chemical use, are factored in and minimised.
- Water Service Northern Ireland is a member of the Procurement Practitioners Group and is a designated centre of procurement expertise. The remit of PPG is to look at procurement across the wider public sector in NI and ensure that procurement is carried out in accordance with the NI Public Procurement Policy. Initiatives set out within this policy include sustainable development in construction. Through framework contracts for capital investment projects, Water Service NI is integrating its supply chain to enhance capital procurement efficiencies. The framework agreements will lead to a better understanding of Water Service requirements including its environmental requirements, and allow for improved measurement and assessment of contractor performance.

G4 Contractor Relations

Contracts paid in accordance with agreed terms = 65%

Confidence: Medium/Low

The water industry employs a large number of contractors and suppliers through its areas of business, with some outsourcing of operations, for example in the utilisation of sewage sludge. Making payments on time and meeting other conditions of engagement helps towards a healthy relationship with suppliers and contractors. By enabling them to meet their wage and other payment commitments, it also helps the supply chain to remain sustainable.

Aim

The indicator gives a measure of fair dealing with suppliers and contractors to the industry. A trend of an increasing percentage of contracts paid in accordance with terms would show a move towards sustainability.

Results

The water industry has over 50,000 supply contracts and in 2003 received over 750,000 invoices to pay. Some 65% of these were paid on time.

Only a small fraction of invoices received are disputed. Mostly delays result from inadequate information and late delivery notes.

Data were received from operators representing no more than 65% of the UK population so confidence in the data set is medium/low.

Best Practice

- Many operators use framework contracts with suppliers and contractors. These are monitored and potential environmental benefits identified for inclusion in new/renewed agreements.

G5 Convictions

Total number of convictions = 71

Confidence: High

The industry strives to be fully compliant at all times with the extensive range of environmental, social and economic regulations that apply across its business. With a large number of individual operations, very occasionally unforeseen events, accidents or mistakes occur that prevent full compliance with the huge number of conditions and standards that are set out in licences and permits to which the industry is subjected. Regulators nearly always bring prosecutions for the most serious pollution (Category 1) incidents, serious drinking water quality events and substantial health and safety breaches: in other cases cautions may be sufficient.

It is important to note that a conviction does not indicate the severity of the incident: in the vast majority of cases the impact is low and any damage short-term and repairable. Also, conviction may be several years after the event that triggered the prosecution.

Aim

This indicator charts the water industry's record on convictions for offences under the extensive range of environmental, employment and trade legislation that regulates its many activities.

Results

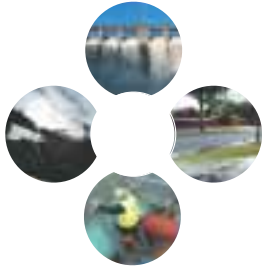
In a relatively small number of cases for the many of its activities impacting on the environment, the water industry was convicted in 2003 for some contraventions of the stringent quality standards. There were 71 convictions in all, of which 54 were related to sewage, 3 to Category 1 pollution, 1 other environmental, 5 nuisance and 8 to street works. There were no convictions for water resources or drinking water supply. Total fines exceeded £250,000.

Weather conditions and varying enforcement activity affect the degree of action focussed on the water industry. Compared with last year, there was a marked (33%) reduction during 2003 in the number of public health and environmental convictions.

Convictions are on the public record and data were obtained from all operators. Confidence in them is high.

Best Practice

- The industry applies a "prevention is better than cure" approach to avoid incidents and their recurrence.
- Where incidents did occur, thorough investigations were carried out and better management practices and equipment adopted. For all water quality events, for example, Anglian Water prepares and disseminates a "Lessons Learned" report and tracks its progress via a quality assured procedure to ensure appropriate actions are taken locally and regionally. Southern Water monitors its performance in the area of environmental incidents closely and is transparent in public reporting this information. Like other companies, it contacts the Environment Agency as soon as it learns of a potential pollution incident (an industry benchmarking exercise for 2003 showed it to have the highest rate of self-reporting such incidents). Field Event Co-ordinators are notified of any pollution incidents and they manage on-site attendance needs whilst a Pollution Incident Response team gives specialist advice relating to potential environmental impact and can take on-site sampling as required. In order to respond rapidly to ensure that any incidents are contained, United Utilities has developed 'Compliance Blue Light', which ensures that personnel, advice and equipment are available as early as possible. It has intensive care teams to ensure that works that have suffered compliance problems are targeted to bring them back in to compliance.



Theme N – Environment (natural capital)

The water industry impacts on natural capital through its use of natural resources (materials and energy), and through its management of the resources within its sphere of influence (specifically water resources, emissions of wastes to the environment and its land holdings). This group of indicators seeks to quantify and explain the actions taken to control those impacts.

Weather conditions can have a profound impact on the industry's use of natural capital. Hot, dry conditions can deplete water resources and result in increased customer demand. Storms can substantially increase the amount and quality of wastewaters received at wastewater treatment works and discharged back into the environment. 2003 was generally mild, with a very hot and dry summer (Brogdale near Faversham broke the UK temperature record in August with 38.5°C) and rainfall generally below average (some very heavy local storms) until November and December.

N1 Use and management of key materials

Indicator under development

Certain substances and materials used by the water industry are essential to its operations: chemicals for treatment of water and wastewaters, concrete used in water mains and sewerage systems, aggregates used in construction, pipes of various materials of construction, etc. The more efficiently these chemicals and materials are used and any waste recovered or recycled afterwards, the more sustainable the operation and the lower the potential impact on the environment. The water industry needs to consider how and what chemicals and materials it uses over their total life cycles so that the optimum sustainable and practical option can be taken.

Aim

This indicator will seek to describe how the water industry manages the use or disposal of those materials that, because of quantities used or impact, have the most influence on its performance.

Best Practice

Operators look to make optimal use of the chemicals and materials they use, on a case-by-case basis. The recycling and recovery of wastes are extensive for excavated spoil and sewage sludge but is, for example, also commonly practised for waste paper.

N2 Sludge management

Sludge going to re-use/recycling = 77%

Total amount of sludge generated = 1.3m tonnes dry solids.

Confidence: Medium/High

The treatment of water and wastewater produces sludges that may be suitable for recycling, usually to agricultural land. Here the sludge provide nutrients, essential minerals and water that encourage plant growth and organic matter that helps condition the soil.

Aim

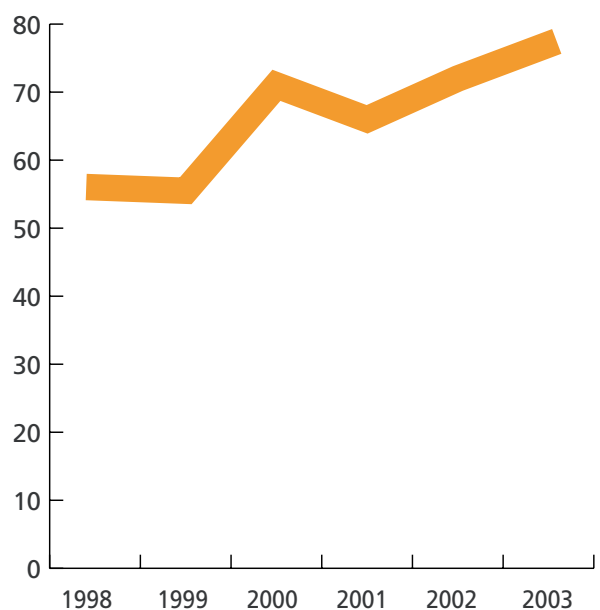
This indicator is intended to show the extent to which the water industry takes the opportunity to reuse the main by-products of its treatment operations, water treatment sludge and sewage sludge.

Results

There was over 1.3 million tonnes of sludge (dry weight) produced in 2003/2004 in treating drinking water and sewage. 77.3% of sewage sludge and 71% of drinking water sludge was recycled – a combined success rate of 77%.

Data on sewage sludge are complete for the UK. Data on water treatment sludge are from operators that serve about 85% of the UK population. Also, operators may interpret recycling and reuse in slightly different ways. Overall, confidence in the data set is medium/high.

% Sludge Reused



Best Practice

- Water operators adhere to the safe sludge matrix agreed between Water UK and the British Retail Consortium and supported by others in the food chain. They follow strict procedures (developed in the food industry) to assess and minimise risk to public health. Research via UKWIR investigates any general risk - perceived or real, current or future - that may arise.
- Water UK published a comprehensive briefing pack for the industry's stakeholders including customers and the public. This gave information about the recycling of treated sewage sludge on agricultural land, covering the regulatory framework and scientific background, recycling and sustainability, and a detailed question and answer paper.

N3 Management of materials from excavations

Excavated material diverted from landfill= 64%

Total amount of excavated material = > 6m tonnes

Confidence: Medium/Low

During renewal and maintenance of the water industry's extensive network of underground pipes, rocks, soil and old pipework are excavated. Schemes to build or refurbish treatment works also produce excavated materials. Traditionally, all these excavated materials are either reused to reinstate the land or sent to landfill. Landfill is considered to be the least sustainable of all waste disposal options, so the more waste that is diverted from landfill the greater the sustainability.

Aim

This indicator is intended to provide a measure of how much excavated material is re-used or recycled rather than being disposed of to landfill.

Results

Results were obtained from 14 operators, serving about 65% of the UK population. Of the 5.9 million tonnes of excavated spoil reported, 3.8 million tonnes were recovered for land reinstatement and other purposes (rather than landfilled).

Confidence is medium/low.

Best Practice

- The water industry tries to avoid generating waste wherever possible. Its contractors regularly implement mains renewals programme by no-dig" techniques – notably directional drilling and pipebursting.
- As an example of the attention the industry gives to waste management, Thames Water is developing a screening method to subject some of the largest capital programme projects to a waste management review before construction starts. An internal waste 'swap shop' is also being developed for the Engineering Division's intranet site to encourage reuse of wastes, thereby reducing the amount of virgin materials used and save on resource and disposal costs. In a related activity in support of the Government's Waste Strategy 2000 ambitions to divert wastes away from landfill, the company is working in partnership with Kraft Suchard Foods to compost and recycle 10,000 tonnes of coffee manufacturing wastes each year.

N4 Energy use (at fixed sites)

Total energy use = 8,030 GWh

Energy required to supply 1 MI water = 663kWh

Energy required to treat 1 MI sewage = 645kWh

Confidence: Medium/High

The water industry is a major energy user, particularly at fixed installations such as treatment works and pumping stations. As higher levels of treatment to meet increasingly stringent standards are demanded for both water supplies and treated sewage discharges, so energy use has increased accordingly. Improved energy efficiency and increased use of renewable energy only partially compensate.

Aim

This indicator attempts to record the efforts the water industry is making to increase efficiency in energy use at fixed installations.

Results

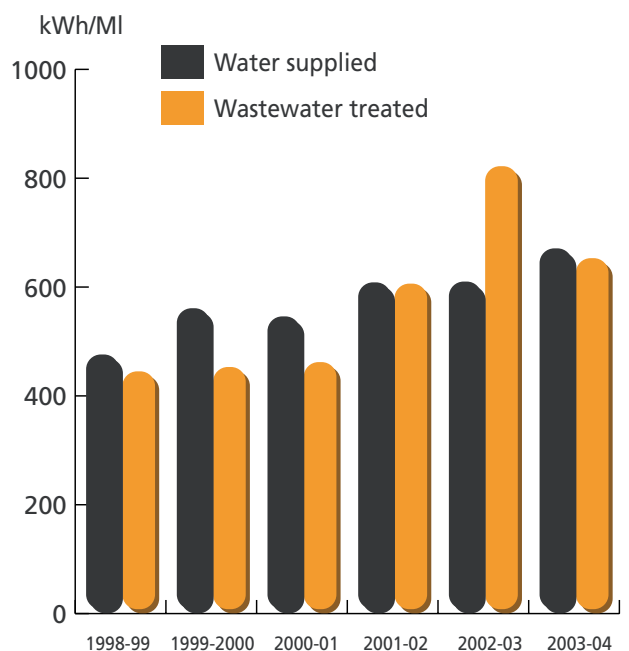
The water industry used over 8,000 GWh of energy in all its operations during 2003/2004, with sewage treatment and water supply requiring equal amounts. The amount of energy needed to deliver 1MI of water was 663 kWh whilst 645 kWh was used to treat 1MI sewage.

Measures adopted to reduce energy use have not been able to keep pace with the growing demands from further treatment.

Recording and reporting of energy use at fixed sites continues to improve. The indicator covers over 95% of the UK population. Confidence in the results is medium/high.

Best Practice

- Operators pay great attention to their use of energy, forcing it down where practicable. Hence Wessex Water uses a computer-based management system called PAM - Process Area Monitoring. This allows it to set up energy performance benchmarks for similar processes/plant irrespective of population, enabling it to identify processes with high energy use and to detect and investigate sudden changes. Wessex Water also established a water industry Energy Management Group to encourage best practice and enable benchmarking across the industry.



N5 Use of renewable energy (at fixed sites)

Renewable energy used of total energy used = 6.1%

Total amount of renewable energy generated at water industry sites = 345GWh

Confidence: Medium

As well as improving energy efficiency, the water industry seeks to take renewable electricity from the national grid and to increase the energy that it can generate on site, for example from the biogases produced by wastewater and sludge processes.

Aim

This indicator shows the extent to which the water industry makes use of renewable sources of energy, including those generated internally.

Results

In 2003/2004 the amount of renewable energy as a proportion of total energy used in the water industry remains static compared with last year, at just over 6%. The total amount of renewable energy generated by the industry is also constant, at 345 GWh.

Information on renewable components of energy use is now reasonably well reported across the water industry. Confidence in the data set is medium.

Best Practice

- Many water operators are looking into alternative technologies. Southern Water, for example, is exploring the use of solar energy and wind turbines at small wastewater treatment plant and the use of waste heat

from its CHP units to dry wood from coppiced woodlands for use as a renewable fuel. Welsh Water installed the first solar powered combined sewer overflow in Wales and encouraged CSO designers to use wherever possible, non-powered or self-powered screens before electricity driven screens. Wessex Water has been looking at methods to increase the efficiency of digestion processes at those works with CHP, to maximise gas production: in trials at its Avonmouth works ultrasound is being used to improve digestion of activated sludge.

- In May 2003 South West Water replaced the ageing 30kW reciprocating CHP units at Kilmington wastewater treatment works with the UK's first sewage gas microturbine CHP unit (the 105kW Turbec T100). This is three times more powerful than before and will utilise all of the available gas to generate electricity and heat rather than allowing excess gas to escape or burn to atmosphere. The unit will generate over 500MWh of renewable electricity each year, most of which will be used to power process equipment at the site, thus avoiding over 215 tonnes p.a. of the greenhouse gas CO₂. Emissions are extremely low owing to the efficient combustion process of the microturbine: NO_x less than 15ppm, CO below 15ppm and unburnt hydro-carbons below 10ppm.

N6 Emissions of greenhouse gases

Emissions of greenhouse gases and emissions per head of population

Indicator under development

CO₂ emissions per person for fixed sites = 0.057 tonnes

CO₂ emissions per person for road transport = 0.0026 tonnes

Confidence: Medium

Greenhouse gases contribute to global warming and their emission needs to be within the environment's natural capacity to absorb them to be sustainable.

The UK has a legally binding target from the Kyoto Summit on Climate Change to cut greenhouse gas emissions by 12.5% below 1990 levels by 2008-2012. The UK programme also has a domestic goal to cut carbon dioxide emissions by 20% below 1990 levels by 2010.

Water industry activities use electricity and gas that has been generated from fossil fuels that emit greenhouse gases into the atmosphere. Direct releases of greenhouse gases, such as methane, come from wastewater treatment processes. Road transport produces carbon dioxide and nitrous oxide. UKWIR is developing a methodology for assessing emissions of greenhouse gases from all sources within the water industry so that an appropriate indicator of its performance in reducing emissions and contributing to the UK's targets can be given. Until then, performance is measured in terms of CO₂ emissions.

Aim

This indicator would give a measure of the industry's contribution to reducing greenhouse gas emissions.

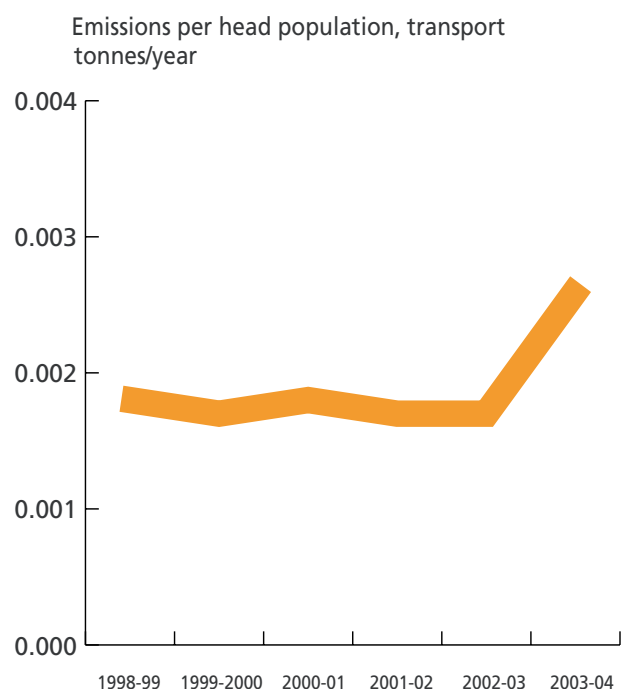
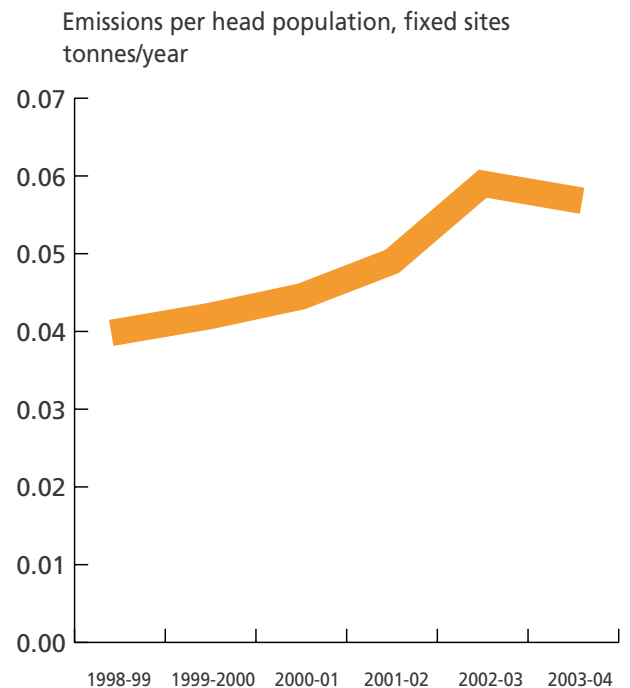
As an interim step, the water industry is monitoring its progress to reduce emissions of the major greenhouse gas, carbon dioxide (CO₂), from energy use at its fixed sites and in road transport.

Results

The water industry needs significant amounts of energy to operate its water and waste water systems to increasingly high standards and this is reflected in the amounts of carbon dioxide emitted from its fixed plant. For 2003/2004 this averaged at 0.057 tonnes per head of population.

Total emissions of CO₂ in the UK in 2003 were about 150 M tonnes (CO₂ equivalent) with the UK water industry contributing less than 3%.

For transport, the water industry was responsible for 0.0026 tonnes per head of population in 2004. The



water sector is responsible for about 3% of the national 32 million tonnes carbon from all road transport.

Data were derived from operators representing 90% of the UK population for fixed sites and 75% for road transport. Confidence in them is medium.

Best Practice

To determine the best way forward, water operators have investigated the potential impact of climate change on their businesses. Nationally, this has been through UKWIR research. Locally, a number of initiatives have been taken. Northumbrian Water, for example, arranged a workshop and produced a report, identifying operational risks and management options.

Operators have progressed a number of initiatives to reduce the environmental and social impacts of its transport use. Thames Water, for example, carried out a Green Transport Survey to understand current business travel and commuting behaviours of employees, identify barriers to reducing business / commuting mileage and highlight initiatives that could encourage changes in behaviour. The survey results have helped to develop an action plan to encourage changes in travel which were carried forward in 2004.

Like others, Yorkshire Water has worked with the Carbon Trust, a Government backed organisation that works with businesses to reduce their carbon dioxide emissions. Yorkshire Water aims to do this by improving the efficiency of its water supply system. The carbon management study is looking at software development and pumping configurations and will use the data to model the network in such a way as to optimise energy efficiency levels.

N7 Sustainable management of water resources

Indicator under development

The industry has a pivotal role in the water cycle – abstracting raw water from one point in the environment and returning treated wastewater in another. Under dry conditions, abstraction can adversely affect river flows and levels and adjacent wetlands; conversely, wastewater discharges can maintain them.

In England and Wales where most low flow rivers are found, the Environment Agency attaches conditions to abstraction licences. In extreme weather conditions or where inadequate licence conditions exist, abstraction may affect the local environment. The water industry is not the only body to abstract water. Nevertheless the industry is obligated to supply customers with water to meet their drinking and general health needs and has to balance these demands with concerns for the environment.

The Environment Agency and English Nature have assessed areas and rivers that are at risk from low flows and have prioritised those where action is needed first. A few of these implicate water industry abstractions, though often other reasons such as agricultural water use and drainage are more significant. Some rivers are naturally subject to low flows during parts of the year, due to their substrata that is generally a porous rock such as chalk.

Aim

This indicator would describe the extent to which water abstraction by the water industry has ecological impacts.

Best Practice

- Operators take a variety of measures to reduce environmental impacts of water abstraction. Those taken by Water Service Northern Ireland, for example, include maintaining environmental flows agreed with the Regulator, compensation water agreements, public consultation on the water resource strategy and undertaking environmental impact assessments on individual capital investment projects arising from the strategy. Wessex Water uses boreholes to pump out groundwater to supplement river flows during the summer which may be affected by nearby abstractions for public water supply. This enables the operator to continue to use groundwater sources for public water supply, which have a lower power and chemical usage than their surface water equivalents. In Dorset, Wessex Water is working with farmers to encourage improved agricultural practice to avoid the need for advanced water treatment with its high power and chemical needs.

N8 Compliant management of water resources

Number of exceedances of abstraction licences = 512

Volume of water abstracted in excess of the licensed volume =3,750MI

Confidence: High

The Environment Agency licenses water suppliers in England and Wales to abstract certain amounts of water daily and annually and monitors their performance. Occasionally, perhaps due to contamination of a source that makes it unsuitable for use for a while, or to major works such as a burst water main or to support the local Fire Brigade, it becomes necessary to exceed the licensed quantities to allow the operator to maintain a supply to customers.

The indicator assumes that abstraction licenses are set at levels that would not cause adverse impacts (not always the case). A breach does not mean that an adverse effect results, though it may indicate a potential risk to achieving sustainability.

Aim

This indicator records the industry's ability to comply with its abstraction licenses.

Results

The water industry holds about 2,100 abstraction licences and abstracts over 16,000 MI/day of water for public supply.

In the dry, hot conditions in 2003/2004, 231 licences with daily limits were exceeded a total of 500 times, with the volume above the limit totalling 1,250MI over the year, an equivalent of 2 hours supply. In addition 13 licences with annual limits were exceeded by a total of 2,500MI (less than 4 hours supply).

Data were received from operators serving 85% of the UK population (a licensing system does not apply in Scotland). Confidence is high.

Best Practice

- All water suppliers have initiatives to promote water efficiency. Three Valleys Water has won five independent awards over the last two years for its activities. Its water efficiency strategy identifies five streams of activity: promoting water efficiency through the media and its award winning Environment Education Centre, measuring and appraisal techniques, the supply versus demand balance, the operational use of water and research and development.

N9 River Water Quality

Rivers with very good to fair chemical water quality (Classes A –D) = 95%

Rivers with very good to fair biological water quality (Classes A –D) = 95%

Confidence: High

The water industry is a major discharger to inland waters. Between 1990 and 2000, it spent over £4 billion in England and Wales alone to improve discharges. From 2000 to 2005, it is spending a further £2.9 billion. These investments, with Environment Agency activities to prevent pollution, account for much of the improvement in river, especially biological, quality. There is a limit to how much further improvement can occur without measures taken to tackle sources of diffuse pollution from agriculture and transport.

The Environment Agency classifies stretches of river into 6 bands, A-F, with classes A-D ranging from very good to fair, for both chemical and biological water quality.

Aim

This indicator provides a guide to how effectively the water industry manages and treats wastewaters and storm waters to ensure the receiving river water quality is protected and improved.

Results

In the UK in 2003, it is estimated that about 95 per cent of rivers were of very good to fair chemical quality. This is an estimate because the classification scheme in Scotland is different.

Approximately 95 per cent of rivers were assessed as being of very good to fair biological quality.

Changes in river lengths monitored from year to year also affect trends. However the trend is clear: an upward rise in river water quality.

Confidence levels are high as data are gathered by the Environment Agencies.

Best Practice

- There are many examples of good practice throughout the industry. For example, Anglian Water has invested £8 million at Whitlingham wastewater treatment works, serving Norwich, to remove phosphorus by biological means. This avoids the use of iron salts, thereby saving money, chemicals, transport and possible discharge of metal traces to the environment. More generally, its "Rivercare" programme provides equipment and advice to 23 local community groups to adopt stretches of river and to undertake work to improve their amenity and habitat.

N10 Bathing Water Quality

Designated bathing waters achieving mandatory standards = 98%

Designated bathing waters achieving guideline standards = 75%

Confidence: High

Compliance with bathing water standards established to protect public health is a good measure of sustainability under the Brundtland definition.

The Bathing Waters Directive sets the physical, chemical and microbiological parameters to which bathing waters must conform. Two sets of microbiological standards exist: mandatory standards which must be achieved and more stringent guideline standards which are desirable. The environmental agencies monitor designated bathing waters through the bathing season to assess compliance. In England and Wales, Ministers have instructed the Environment Agency to ensure that, by 2005, 97% of bathing waters pass the mandatory standards and to achieve a significant improvement in guideline standards passes. In Scotland, the Scottish Environmental Protection

Agency is 'committed to achieving full compliance with the Directive standards'.

Many factors influence the microbiological quality of bathing water, including birds and other wildlife, diffuse run-off from agriculture, and point sources. The water industry has an influence through its continuous and intermittent discharges but a new approach from Government to tackling some of these sources of diffuse pollution is needed.

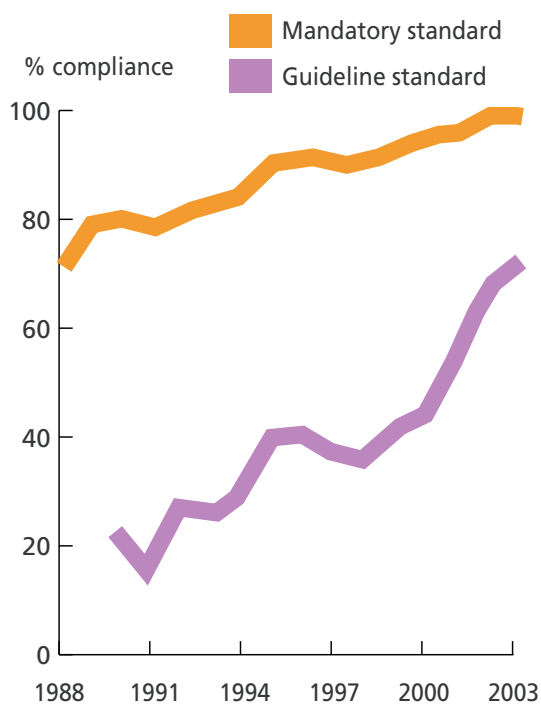
Aim

This indicator is a measure of how investments made by the industry help to improve UK bathing water quality.

Results

536 of the 547 designated coastal bathing waters and all 11 inland bathing waters in the UK complied with the mandatory standards of the Bathing Waters Directive during the 2003 bathing season, giving an overall success rate of 98%. The tighter guideline standards were achieved by 75% of bathing waters in the UK, maintaining the improvement made during the previous season.

Percentage of coastal bathing waters meeting EC Bathing Water Directive mandatory and guideline standards: 1998 to 2003



Source: EA/SEPA/Defra

For both mandatory and guideline standards, the improved bathing water quality continues in large part due to the investments made by the UK water industry. Private discharges and diffuse pollution, outside the industry's control, may constrain further improvement.

The EU Commission noted that there were no bathing areas in the UK that were insufficiently sampled. Data are complete for all UK designated bathing waters and are published by the Environment Agencies. Confidence in them is high.

Best Practice

- Through improvements carried out to wastewater treatment networks, water operators have helped bring about improvements in bathing water quality around the UK coastline. Water operators are partners and funders of various clean coast initiatives, linking people living near the coast, working on the sea or visiting beaches, to organisations striving to reduce marine litter, sewage pollution and urban or rural diffuse pollution.

N11 Management of biodiversity

Indicator under development

The water industry is a major owner of land and water assets in the UK and these provide support to a wide range of different flora and fauna. The management of biodiversity on water industry holdings is therefore a crucial component of the sector's sustainability objectives. The Government has set out Biodiversity Strategies: the water industry is committed to play its part in their full implementation. In Scotland, the recent Nature Conservation Act puts a duty on public bodies to have regard to biodiversity.

Aim

This indicator will consider the nature and effectiveness of management activities within the water industry aimed at improving the biodiversity value of its landholdings.

Best Practice

- The water industry takes numerous initiatives in support of biodiversity. For example, a South West Water employee has set up an on-going survey of the wildlife frequenting Watercombe water treatment works and the surrounding area, assisted by a British Trust for Ornithology (BTO) qualified ringer. By trapping and ringing birds, a detailed log has been compiled of

populations of all bird species. This contributes valid data to national breeding bird success statistics, and identifies opportunities to provide nest boxes, and make recommendations to enhance the site's wildlife value.

- A Severn Trent Water scheme to redevelop the landscape of Aston Hall Farm near Stone in Staffordshire won top place in the Utilities section of the 2003 National Green Apple Awards. The 300 acre site borders the River Trent and is used for recycling of treated sewage through agriculture. By changing the field drainage system it was possible to create a new wetland area which has proved ideal habitat for wading birds. In addition river bank re-profiling along the Trent has led to a sustained increase in both otters and water voles. The project was also awarded a top prize in the CIWEM and RSPB 'Living Wetlands' Awards. United Utilities also won a Green Apple Award as "British Champion in Farming and Agriculture" in 2003 for its High Hullockhowe Farm. Working with its tenant farmer and the RSPB, the farm now operates to a new farm management plan, with benefits for water quality and biodiversity, whilst providing a viable income for the farmer.

N12 Status of designated sites

Status of SSSIs on water industry holdings:

- **Favourable: 14%**
- **Unfavourable but recovering or stable: 74%**
- **Unfavourable and declining or part destroyed: 12%**

Confidence: Low

Sites of Special Scientific Interest (SSSIs) are sites designated for their exceptional wildlife and geological features. Their unique and varied habitats have developed over hundreds of years through management practices such as grazing and forestry. Protecting and managing SSSIs to maintain their conservation interest is an investment for future generations.

SSSIs are the responsibility of the statutory nature conservation agencies within each country. These are responsible for objectively assessing the quality of nature within SSSIs and to prepare short management statements or management briefs for each one.

The Government's Public Service Agreement (PSA) target is to have 95% of SSSIs in favourable or recovering condition by 2010.

Under the Wildlife and Countryside Act 1981 (as amended), public bodies must "take reasonable steps, consistent with the proper exercise of their functions, to further the conservation and enhancement of SSSIs". The Water Industry (Scotland) Act 2002 places a similar duty on Scottish Water to take account of designations. The UK water industry is committed to meeting these obligations, although its achievement can be compromised due to the activities of third parties (e.g. nitrate and phosphate from agricultural practice that results in the eutrophication of reservoirs).

Aim

This indicator provides information on the status of SSSI's on water industry holdings showing, over the long term, the robustness of industry management activities to protect the quality of nature at these sites.

Results

There were 6,565 SSSIs in Great Britain and 196 Areas of Special Scientific Interest (ASSIs) in Northern Ireland, covering a total UK area of 2,377,714 hectares (Ref: Joint Nature Conservation Committee).

In 2003, 19 operators reported 562 SSSIs on their land holdings, covering over 400,000 hectares. The status of just 10% of this was reported: In 2003 14% were in favourable status, 24% were recovering, 50% were stable and 12% were in decline. Scottish Natural Heritage is currently undergoing a review of all SSSI sites: no

record of site conditions is yet available for Scotland.

Although some data were obtained from operators representing 85% of the UK population, confidence in them is low. This is because English Nature only started to assess the status of SSSIs in 2002, data on status is only available in England and only part of a SSSI may be owned by the water operator.

Best Practice

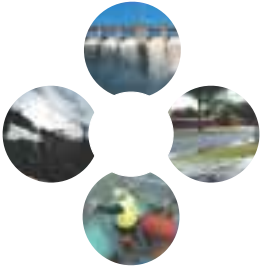
- Water operators have a duty to maintain SSSIs on their holdings in favourable status and are committed to achieve this. For example, in December 2003, Yorkshire Water and English Nature signed a partnership agreement to protect and improve more than 50 SSSIs. This Memorandum of Understanding, signed by the Chairmen of Yorkshire Water and English Nature, commits both organisations to addressing nature conservation issues at SSSIs.

Use of water industry land by the public

The water industry is subject to a number of legally binding Acts of Parliament which provide access to landholdings in the ownership of the industry and on the protection of special habitats and species either on the industry's own land or on areas that are subject to significant impact by the industry. All water operators except Northern Ireland publish a Conservation and Access report that details initiatives being undertaken to promote the environment.

Best Practice

- Operators make the majority of their land available for public recreation and do so in a controlled way that addresses the issues of public safety, disturbance to wildlife and the best sharing of available space between different recreational users. Much water space is also made available for recreation, subject to maintaining water quality and to operational and safety restrictions.
- Water Service is one of the largest landowners in Northern Ireland with 32,000 acres of upland heath. It has a policy for use of its lands for recreational purposes. It owns 30 upland reservoirs, mostly in areas of outstanding natural beauty, and allows public access to 26. On the largest site at the Mourne mountains, it operates a summer visitors centre, with approximately 54,000 visitors to Silent Valley Visitor Centre annually. Fishing leases are in place in some 30 impounding reservoirs.



Theme S – Society (social capital)

The water industry provides essential services to the UK population, the supply of clean water to domestic and commercial customers and the treatment of wastewater before returning it to the environment. The industry's main social aspects relate to the provision of these services. The delivery of services to meet customer needs is central to sustainability within the industry as a whole.

S1 Security of supply

Security of supply index score for the UK

Security supply indices for water suppliers = range from -24 to 100

Confidence: High

The water industry has a responsibility to supply water to both domestic and commercial customers and to meet new demands for water arising from development. Maintaining the security of water supplies is fundamental to the level of service it provides its customers. The difference between the theoretical amount of water that suppliers have available and the amount actually supplied is termed "headroom" and will vary according to the particular supply zones. There will also be peak periods of demand for water, for example in hot weather, often coinciding with dry periods when water availability is lower.

Ofwat introduced a Security of Supply index in 2002 to specify for each zone any deficit in headroom and the customers exposed to it. A water supplier that meets the target headroom in all its zones would score 100, the water supply being fully sustainable from the resources available. Progressively lower scores (which may be negative) reflect the extent of headroom deficit and the proportion of population affected. The index also enables water availability and leakage issues to be taken into account.

Aim

This indicator is a measure of the ability of water suppliers to have available sufficient water to maintain security of supplies in their supply zones

Results

The results show a large variation from one part of the UK to another. 14 water suppliers reported an index of 99 or 100 (that is, no difficulty in accessing sufficient water resources to satisfy demand) and a further 7 reported indices above 75. Only 2 reported a low index, one negative.

The data are collected for Ofwat so confidence is high for England and Wales.

Best Practice

- Water operators look to make use of unused current licensed quantities, transfers between zones in surplus to those in deficit, additional raw water storage and, where appropriate, the reuse of highly treated effluent.
- Southern Water, for example, operates in one of the driest and most densely populated regions of Britain and existing water resources are already used to full capacity. Government-planned expansion of housing and population will lead to increases in demand for water within the region. The company actively works with other water companies in the South East of England, OFWAT and the Environment Agency to produce an integrated water resources strategy for the development of the major new water resource developments required to serve future demand. Its Testwood Lakes scheme has created a reservoir close to an existing water supply works in the valley of the River Test, helping to safeguard water supply to 200,000 customers in Southampton and the surrounding area.

S2 Water affordability

Households for whom water and sewerage service bills represent more than three per cent of their income: 9% (UK Government indicator)

Number of vulnerable customers = 7,202 (England & Wales)

Confidence: High

Ofwat regulates on a 5-year cycle the price of services that the water industry provides. In so doing, it must ensure that companies are able to fulfil their statutory obligations to provide water and sewerage services. The balance between investment to maintain and improve the quality of the service and the implications in terms of charges to the consumer is key to sustainability.

Defra sets the threshold for water affordability at less than 3 percent of household income. This is not within the control of water operators: the regulators set the price limits and the general economy determines relative income.

For some customers, water charges do represent a financial burden. For the most vulnerable customers, regulations exist to ensure that protection is available. These are customers on low incomes with a water meter who might face high bills because they have either three or more children or where there is a specified medical condition requiring significant extra use of water are entitled to apply for a capped tariff.

Aim

This indicator provides information on the affordability of domestic water services by the least well off in UK society. Its movement over time reflects how the economy as a whole is performing.

Results

The percentage of households for whom water and sewerage service bills represent more than three per cent of household income was 9% for 2002/2003, the latest year for which data are available. This is a Government Headline Indicator and confidence in the data set is high.

The number of successful applications in England and Wales (all operators) for vulnerable customer status was 7,202 in 2003/2004. In 2002/2003, there were 5,852 successful applications.

Best Practice

- In cases of genuine hardship, operators offer assistance to customers who demonstrate a willingness to pay. In the Anglian Water region, for example, Aquacare tariffs are available to vulnerable customers. The Anglian Water Trust Fund makes grants available to help those in need meet arrears of water and sewerage charges and funds voluntary sector groups to provide money advice and education services.

S3 Water demand

Domestic water consumption = 150.3 litres/person/day

Non-domestic water consumption = 1.59 litres/pound GDP

Total water consumption = 12,886 MI/day.

Confidence: Medium

In England and Wales, water operators have a legal duty to promote the efficient use of water by their customers. This leads to less water being abstracted, lower demand on the public supply, and smaller amounts of chemicals and energy being needed for treatment and pumping. In Scotland, Scottish Water must, in exercising its functions, seek to ensure that its resources are used economically, efficiently and effectively.

Aim

The indicator is a measure of the demand for water for both domestic and non-domestic purposes.

Results

Domestic water consumption during 2003/2004 was 8,700 MI/day, averaging 150.3 litres per person per day. This was slightly higher than the previous year, possibly due to the relatively warm and dry summer of 2003.

The 47 million customers with unmeasured supply consumed 153.1 l/p/d. The 10.6 million customers with measured supply had a lower consumption of 138.1 l/p/d.

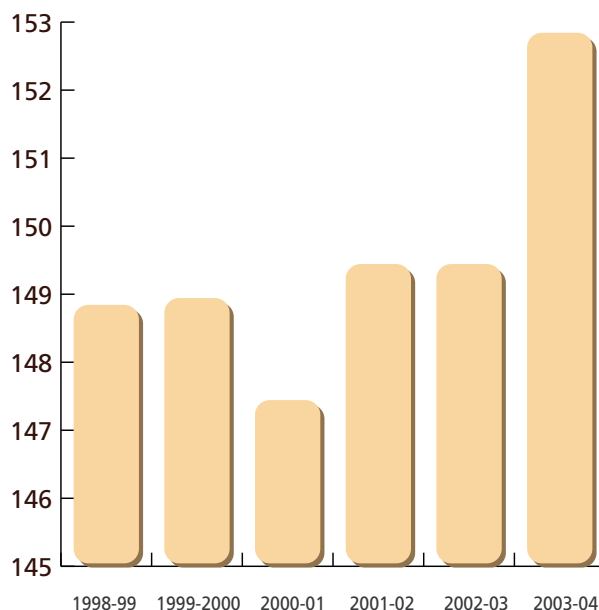
For non-domestic customers, some 95% of the 1.53 million MI of water supplied during the year (4,187 MI/day) was measured. The water consumption was 1.47 l/£GDP, a further improvement over the previous year. GDP for the UK in 2003/4 was £1,041.85 million (HM Treasury).

The results are based on a full data set for UK operators. As some assumptions were made in calculating data on unmeasured supplies and as water usage does not necessarily reflect economic output, confidence is medium.

Best Practice

- Water UK collaborated with NHS Estates and Watermark to produce 'Water Efficient Hospitals', an information pack to help hospitals use water wisely and save money by cutting both water and energy bills
- Water suppliers have a duty to promote water efficiency by their customers. The activities taken include providing advice and education and awareness of responsible water use, free Save-a-flush Hog Bags or Hippos, easy-to-follow self-help water audit guides, and checking for leaks when meters are installed. For non-

Per capita water consumption (litres per head per day)



domestic customers, water suppliers visit larger users and give advice on water consumption and water efficiency products.

- The internet is a vital learning resource at both home and work. Working together, the water industry with WaterAid and the Environment Agency have developed 'Water in the School' an interactive website which provides everything to set up and run a water conservation project in the classroom – www.waterintheschool.co.uk. For example, Welsh Water has worked with schools in Ceredigion, an area of potential water shortage, to promote water efficiency. Using the website and local advisors to help implement appropriate measures, an average reduction in water consumption of 16% was achieved.

S4 Drinking water quality

Percentage of tests complying with drinking water standards = 99.825%

Confidence: High

UK Regulations implement and for some parameters, such as in managing risks from *cryptosporidium*, go beyond EU Directives on the quality of water for human consumption. They require that drinking water supplied must be wholesome, safe to drink and aesthetically acceptable by measuring compliance with standards for more than 50 parameters. New Water Quality regulations including one to impose the new lead standard of 25µg/l came into force in December 2003.

Safe water for drinking and other domestic purposes is essential for public health and well-being and the sustainability of present and future populations. Providing it through the tap is more sustainable than in bottles and containers that require considerable raw materials and energy to produce and transport, and not all of which are recycled after use.

Aim

The indicator demonstrates water suppliers' success in meeting all the required standards and maintaining very high levels of quality for its customers.

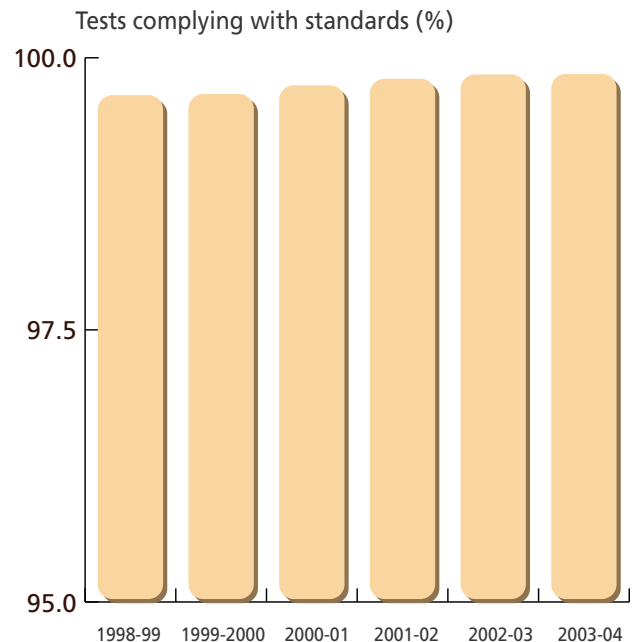
Results

Maintaining a level of compliance close to 100% is a major achievement - and challenge - for the water industry. Water utilities maintained this consistency of performance during 2003, with very high quality water being delivered to customers: Over 3 million drinking water tests were taken in the UK in 2003 and only 0.17% failed.

Results are well recorded and reported for all UK customers so confidence in the data is high.

Best Practice

- Water suppliers continued with positive actions to improve the quality of drinking water. Amongst many water industry projects in 2003/2004, Portsmouth



Water installed a state-of-the-art membrane filtration plant at its Lovedean works to safeguard the public against the risk of *cryptosporidium* being present in treated water. Sutton and East Surrey started work on a rapid gravity filtration plant to enhance the treatment process at Elmer, near Leatherhead, and to supply customers in the Dorking area too.

- United Utilities is preparing catchment plans, documenting the status and issues relating to its catchments. By March 2005 plans will have been written for all catchments: by March 2004, 85 had been completed. The plans help to ensure good stewardship of the catchment area, to protect and maintain the quality and quantity of raw water in a sustainable manner. The catchment plans cover farming practice and land use, as well as the condition of company assets, to ensure that raw water quality is maximised.

S5 Standards of service

Number of payments made against Guaranteed Standards Schemes = 37,082 (England & Wales)

Confidence: High

Guaranteed standards schemes in England, Wales and Scotland set out the conditions under which water industry customers are entitled to compensation if standards of service are not met. These guaranteed standards relate to making and keeping appointments, responding to account queries and complaints, interruptions to water supply, low water pressure and flooding from sewers.

Aim

This indicator reflects the effectiveness of the industry in providing a quality service to both its domestic and commercial customers

Results

The water industry provides services to over 24 million households. The main reason for payments in England and Wales in 2003/2004 was interruptions to supply (24,211), followed by sewer flooding (8,733), late or failed appointments (1,956) and account queries and complaints (1,226). Inadequate pressure accounted for 439 payments. There was a net increase from the previous year.

The schemes do not apply to Northern Ireland. However,

Water Service Northern Ireland is an Executive Agency within Central Government, with Ministerial responsibility for performance and operational targets. Water Service Board is required to monitor its performance against Service Delivery Agreement performance targets, which includes response to written complaints/correspondence, response to customer telephone contact and ensuring customers with appointments are seen within specified time on arrival at our offices.

Data were not available for Scotland or Northern Ireland and represent 85% of the UK population. Confidence in them is high.

Best Practice

- Like others operators, Scottish Water's aim is to deliver promises, right first time to improve the customer experience and drive out the major costs of rework and repeat contacts. 'Promise to Resolution' (P2R) underpins this aim and during 2003/04 the first phase of P2R was completed and successfully delivered: a new customer focussed process for asset reactive work; a new customer contact system, 'Promise'; and implementation of task scheduling and workflow tools.

S6 Investment in communities

Value of community investment = >£11m

Confidence: Low

Water operators recognise that they are an important part of the community in which they operate. They wish to use their skills and resources not only to provide essential core services but also to contribute towards local needs.

Aim

This indicator gives information on the extent to which water operators voluntarily contribute to their communities.

Results

Financial contributions to support activities in the local community were typically around 1% of pre-tax profits. Significant local contributions were also made "in kind". Substantial financial support was also given to national and international charities, notably Water Aid, the charity that supports the provision of safe water and sanitary systems in local communities in under-developed and developing countries.

Data was limited (from operators representing 65% of the UK population) and not collected on a consistent basis across the sector. Work through UKWIR to achieve a consistent methodology is underway: meanwhile, confidence in the data is low.

Best Practice

- Water operator investments in the local community take several forms, for example charitable gifts, direct investment of time or resources including the release of company staff to work on community projects, provision of education and training materials, provision of community facilities and commercial initiatives. For

example, Three Valleys Water sponsored the Rickmansworth Canal Festival and Black Cherry Fair and contributed at least 5 members of staff all day for each day of both events. Its Education Department works on investment within the community, visiting schools to deliver National Curriculum based water projects, donating water bottles, running garden roadshows and educating people about the sensible use of water.

- Thames Water has been involved in a local project helping to revive the River Wandle in South London. For the first time in the UK, JETSET (a charity that Thames Water helped to establish with the aim of educating young people to appreciate, to use and to 'own' the river) raised brown trout from eggs in school classrooms and released them into the river. Thames Water also funded a water safety video for schools along the Wandle Valley.
- The industry gives much attention to school children. For example, in February 2004, Welsh Water launched Waterworld Explorers, a CD-ROM for primary school pupils. This provides a virtual tour of water in Wales and focuses on learning activities covered by the National Curriculum, including geography, science, environmental education and information computer technology. The Government endorsed Yorkshire Water's industry-leading 'Cool Schools' campaign aimed at increasing the availability of drinking water in primary schools. The campaign has led to 600 free water coolers being installed to encourage children to drink more water. Yorkshire Water follows up with a free rap and dance performance to push home the message that drinking water can enhance children's mental and physical well-being. An interactive website has also been created at www.cool-fuel.com.

Theme H – Employees (human capital)

A sustainable organisation must have sufficient human capital to manage and deliver its activities effectively. Providing training to meet the needs of the industry, with good access to employment opportunities, ensuring good working conditions and rewards, and giving attention to the welfare of employees will influence not only the organisation's productivity but also its ability to retain and motivate staff. Against this backdrop, the purpose of this set of indicators is to show the extent to which the water industry values and seeks to develop its human capital.



H1 Employee turnover

Employee turnover = 9.7 %

Confidence: High

The water industry needs a skilled and motivated workforce. Although some turnover is inevitable through retirement and leaving voluntarily, high turnover rates can be detrimental to its on-going success.

Aim

This indicator is a measure of how well the water industry retains its employees.

Results

The turnover rate in the water industry, which has over 36,000 employees in the UK, was 9.7% in 2004. This is a slight increase from last year, probably accounted for by a more complete data set (from utilities employing some 95 % of the UK water industry workforce). Confidence is high.

Best Practice

As a major local employer, operators in the water industry have many schemes in place to look after, and retain, their employees. Several, for example United Utilities, have Investors in People certification.

H2 Investment in staff

Investment in training and development per employee= £400pa

Hours training per employee = 27 pa

Confidence: Medium/Low

Employee training and development are important factors in influencing the ability of employees to carry out their work effectively, helping towards operational viability. The provision of training and development opportunities also shows commitment to employees, encouraging motivation and security.

Aim

The indicator records the investment in time and money spent by the water industry to train and develop its employees.

Results

The UK water industry spent about £15 million a year and 1 million hours in training its employees, averaging £400 and 27 hours for each person. This is an under-estimate in that it does not include on-job training or corporate training. The spend figure is identical to last year, but the hours devoted to training have increased.

The investment and time data are from 70% and 50% respectively of the water industry's workforce so confidence in them is medium/low.

Best Practice

- All operators have or are developing Personal Development Plans (PDPs) for employees. The PDPs identify training needs and monitor progress across a number of core and technical competencies that are targeted and specific to the individual concerned resulting in a more efficient and useful method for developing employees.
- With support from Bolton College, United Utilities has developed an industry first, a BTEC Advanced Level Diploma in Sewerage Engineering. This has set a benchmark of skills and knowledge for its sewerage practice and systems. It is intended to roll out the course to all wastewater network controllers.
- Operators have taken many initiatives over the year to support their employees. For example, South West Water in association with the Devon and Cornwall Constabulary, ran two voluntary training courses on safety and security for women. Over 100 female employees attended which help them build confidence in how to deal with conflict both at work and in their social environment. The programme provided for discussion and for simple self defence. Southern Water offers Modern Apprenticeship Schemes giving school leavers hands on experience alongside experienced employees. The Electrical Apprenticeship combines full-time residential study, day release to achieve qualifications such as NVQs, and practical workplace experience.

H3 Workforce diversity

Employee Profile:

Age: 6.6% 18-24; 65% 25-49; 28% 50-64

Gender: 26% female

Ethnic minorities: 2.5%

Confidence: Low

The water industry needs to employ the most appropriate employees to carry out its operations successfully and sustainability whatever their gender, age or ethnic grouping. Effective management of diversity and equality issues at recruitment and employment stages is a key part of its risk and internal control activities.

Aim

This measures the level at which the industry employs the most appropriate employees, irrespective of age, sex or ethnic background.

Results

Most employees fall into 2 age ranges: 65% between 25 and 49 years, 28% between 50 to 64 years.

55% of the workforce is engaged on technical matters, 30% on support services and 15% in management. Just over a quarter of employees are female, with a slightly greater percentage of women in support services.

The workforce is predominately white with less than 3% in other ethnic groupings. As employees do not have to disclose their ethnic background, this is understated (the national average is 7.9% from an ethnic background). The highest ratio from ethnic backgrounds was in management positions (3.6%) with technical at 1.75% and support services at 2.1%.

Data on age were obtained for 85% of water industry employees but only about 40% for ethnic groups, gender and occupations. Overall confidence is low.

Best Practice

- Yorkshire Water has been ranked top of the class in a national study benchmarking the performance of UK organisations on race. Race for Opportunity congratulated the company following the release of its annual diversity in employment report which praises Yorkshire Water's effective diversity strategy. The Race for Opportunity initiative works in partnership with organisations to ensure they reap the benefits of implementing an effective race and diversity strategy. The study is designed to measure how companies in the UK are progressing in the diversification of their workforce, as well as how close they are to striking a healthy cultural balance in activities across the company. The report provides a snap-shot of UK businesses approach to race and ethnic minorities.

H4 Workforce representation

Workforce employed by organisations who recognise representative bodies or with formal bargaining arrangements = 98.6%

Confidence: High

The ability of employees to work together on different issues demonstrates harmony at the workplace and an efficient approach to bringing about needed reform of working practices and changes to conditions of employment.

Aim

This indicator is a measure of the workforce's ability to influence their working conditions through membership of a union or other employee body.

Results

In 2003/2004, 98.6% of the water industry's workforce had access to representative bodies or formal negotiating arrangements. This is the same as last year.

The data set for the industry was almost complete (representing 95% of its UK workforce) and confidence in it is high.

Best Practice

- Operators support access to formal negotiating arrangements. As an example, formal consultation in Thames Water is via a partnership agreement. The company and its recognised Trade Unions have been pleased to share their experience of working together in this way with other organisations. In 2003, for the second time, Thames Water received the maximum sum allowed from the Government's Partnership Fund, and was one of only 23 to be given an award from a total of 294 applicants. To show its continuing commitment to Partnership, Thames Water will match and exceed the amount awarded by the Government. This funding is being used to help spread awareness throughout Thames Water of the Partnership agreement and its objectives and help to further embed the partnership ethos into the business culture. Initially, this will be achieved through training courses and a variety of events such as a Partnership Awareness Week and will be supported through the use of promotional material and information.

H5 Working environment

Average number of days lost through absence per employee each year = 9.3

Confidence: Medium

Levels of absence relate closely to the quality of the working environment, employee satisfaction and motivation. As only a proportion of those affected by poor conditions would take time off work, this measure gives a very high level impression of the perceived quality of working conditions.

The Government's health targets for 2010 include achieving a 30% reduction in days lost due to work-related ill-health and a 20% reduction in cases of ill-health at work.

Aim

This indicator is a proxy measure of working conditions and employee satisfaction in the water industry.

Results

On average, each employee was absent from work for 9.3 days during the year 2003/2004, including long-term sickness. This was slightly higher than last year and just over the national average of 7.8 days (Confederation of British Industry).

The result is based on data from 85% of the industry's workforce and confidence in it is medium.

Best Practice

In common with other major sectors, the water industry closely monitors, and adopts where appropriate, developments that improve the conditions under which its employees work.

H6 Occupational health and safety

Reported accidents per 100,000 employees = 1,357

Confidence: Medium

The water industry aims to have safe, well-maintained plant operated by trained and safety aware employees. It has potentially dangerous working environments - confined spaces, complex machinery, deep waters, electrical apparatus and hazardous substances - so needs to be constantly vigilant. All accidents with absence from work of three days or more must be reported to the Health and Safety Incident Contact Centre.

Aim

This indicates the safety of working conditions in the industry.

Results

In 2003/2004, there were about 500 reportable accidents in the water industry, representing 1,357 per 100,000 employees. This is a small increase in number over last year but as the dataset is better (representative of 85% of the industry's employees), the ratio is constant. Confidence is medium.

Best Practice

- Water UK published an Occasional Guidance Note for the classification and management of confined space entries. This rationalises previously diverse approaches to an important operational issue. It set out, for the first time, nationally accepted standards of management and operational performance, equipment and competence to be achieved by contractors making confined space entries on behalf of Water UK members.
- The main causes of accidents tend to be manual handling and psychological (stress related). Typical of initiatives taken by the industry over the year, Anglian Water has issued new codes of practice on safe lifting and on managing pressure and stress. Its "Back to Work" programme, targeting rehabilitation and fast track physiotherapy, is recognised by the Association of British Insurers as industry best practice.
- For the sixth consecutive year, Three Valleys Water won the Royal Society for the Prevention of Accidents (RoSPA) Gold Award for its efforts in reducing the number of accidents occurring as part of the company's business. It also redesigned its Hatfield call centre to improve the working environment for employees. New furniture and fittings were included to reduce the risk to health from poor posture and repetitive movements.

Theme M – Assets (manufactured capital)

The water industry maintains a huge asset base of infrastructure. Key components include reservoirs, clean water treatment plant, water mains and sewerage networks, drains (surface and wastewater), waste water treatment plant and sludge facilities. The proper management and maintenance of these assets so that their value is retained and they operate efficiently, is essential to the sustainability of the services that the industry provides.



M1 Performance of supply infrastructure

Connected properties that received low-pressure water supplies = 23,408

Confidence: High

The serviceability of the water supply infrastructure, and therefore how effectively water suppliers operate, can be assessed in several ways, one of which is by the supply of water at adequate pressure. Ofwat stipulates a minimum (adequate) pressure and flow rate of water supply at the boundary of every property. The supply of water at adequate pressure gives a specific indication of how serviceable the water supply infrastructure is.

Aim

This indicator reflects the ability of the supply infrastructure to deliver water at adequate pressure to households.

Results

Over 27 million properties are connected to water supply. In 2003/2004 23,408 of these received water at low pressure. This is lower than for 2002/2003 (some data received last year was suspect and the indicator recalculated based on new data to be 30,744).

The data set was complete for the UK and confidence is high.

Best Practice

- Water suppliers automatically and continuously measure water pressure and flow. Monitoring points are incorporated into the water mains network and are particularly concentrated at points considered to be vulnerable to low pressure. Data are recorded and a register maintained of all locations that fail the standard in any year. Appropriate investigations and remedial actions are taken.

M2 Reliability of supply infrastructure

Connected properties experiencing unplanned interruptions to their supply for 3 hours or more = 845,350

Confidence: High

The reliability of the water supply infrastructure in providing a consistent supply to consumers can be measured through the number of properties experiencing unscheduled interruptions (due to mains bursts, third party damage, over-run on planned work etc). Some interruptions are planned, for example to allow water mains to be rehabilitated; in these cases customers are warned well in advance so that alternative arrangements for having water available can be made.

Aim

This indicator shows the number of properties that experienced some unplanned interruptions to their supply in 2003/2004.

Results

Data from 24.8 million properties in the UK showed that some 845,350 (3.4%) experienced some unplanned interruption in water supply during 2003/2004. This is better than in the previous year (1,062,408 properties affected). In 75% of cases, interruptions were less than 6 hours; a further 17% were reconnected within 12 hours and 6% within 24 hours. Only 1.9% of households experienced unplanned interruptions lasting more than 24 hours.

Data were complete for the UK and confidence in them is high.

Best Practice

- Water suppliers seek to reduce the risk of unplanned interruptions from bursts etc by an active programme to renew and maintain water mains, modernising sometimes very old infrastructure. This benefits customers and reduces loss of a valuable resource. For example, Wessex Water carried out a comprehensive review to identify areas of improvement and to prepare a plan of action: as a result 363 properties were affected in 2003/2004 by bursts lasting more than 6 hours compared with 4750 properties in the previous year.
- Water suppliers also try to ensure that new supply networks will be reliable over their lifetime. Materials of construction and jointing are selected carefully so that pipes are reliable in use and last for many years.

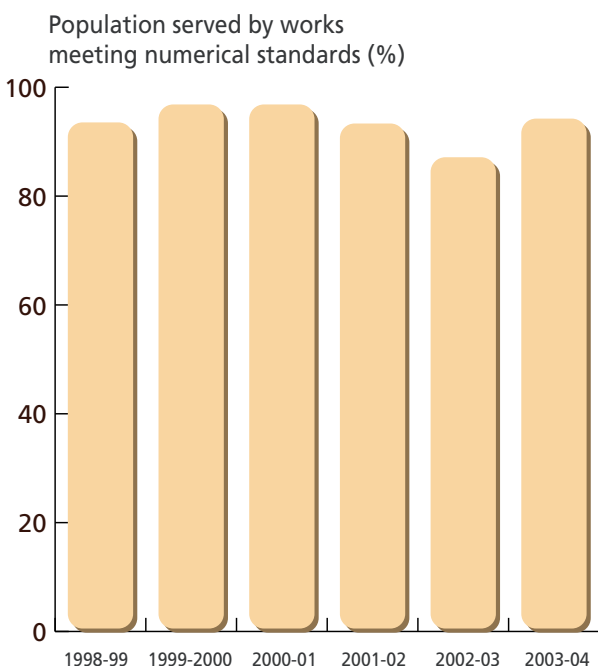
M3 Performance of waste water treatment infrastructure

Population equivalent connected to waste water treatment works complying with sanitary consent standards = 93.7%

Confidence: High

The UK water industry operates about 9,000 wastewater treatment works. These receive sewage from 58 million people in the UK. In addition, some commercial properties are also connected and their contribution is also expressed as a "population". The total number served is known as "population equivalent".

The Urban Waste Water Treatment Directive 1991 requires all wastewater treatment works to achieve a level of treatment according to their size and location, with implementing UK regulations requiring a minimum of secondary biological treatment. The environment agencies set standards and other conditions on the discharges made from the treatment works.



Aim

This indicator is intended to show how successful the water industry is in meeting the standards set for effluents discharged from wastewater treatment works to the environment.

Results

The population equivalent connected to wastewater treatment works exceeded 73 million in the UK in 2003/2004. Works fully compliant with sanitary consent conditions served over 69 million of this population – a 93.7% success rate, a notable improvement over the previous year (86.6%).

Data are complete for the UK. It is collected for Ofwat and confidence is high.

Best Practice

- Like others, Scottish Water categorises its wastewater treatment works in terms of their risk of failing compliance. This risk profile is used to prioritise capital maintenance expenditure and to determine the level of operational input to each works. All failures are thoroughly investigated by a cross-functional compliance team to determine the root cause. The risk profile of works is continuously updated in the light of performance reports.

M4 Sewer Flooding

Properties at risk of flooding = 0.047%

Properties flooded by sewer incidents = 0.016%

Confidence: High

Although it is a relatively rare occurrence, during heavy rain the sewerage network can be overloaded and flooding of properties sometimes occurs. Construction work may also result in flooding of properties.

Aim

This indicator shows the effort the water industry is making to reduce flooding from the sewerage network as far as reasonably practicable.

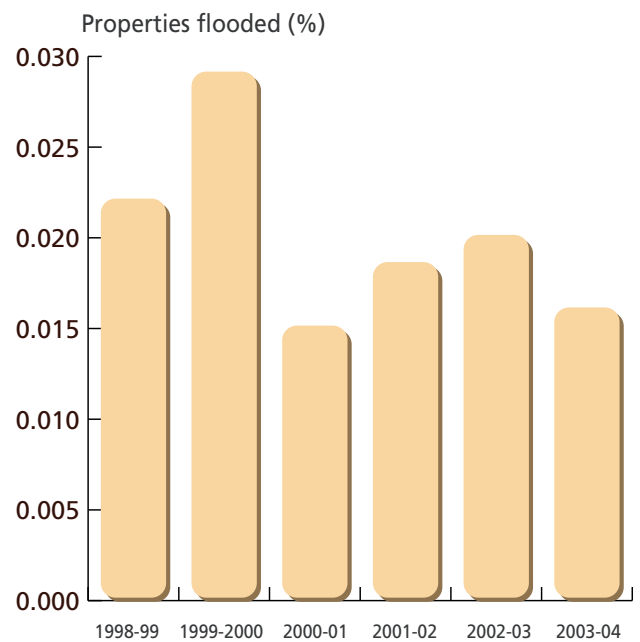
Results

3,872 of 23.9 million connected properties (including empty properties) in the UK - 0.016% of the total - suffered flooding from the sewerage system in 2003/2004. In England, Wales and Scotland, 11,035 properties (0.047%) were at risk of flooding once or twice in ten years.

A full UK set of data were received for properties actually flooded. Confidence in the data, collected for the economic regulators, is high.

Best Practice

- Water operators give careful attention to reducing the risk of flooding by sewage. Dŵr Cymru Welsh Water, for example, completed a £600,000 upgrade, mostly underground, of the pumping station in the playground of Trehafod Primary School, resurfacing the whole playground as a gesture of goodwill. Where sewer flooding incidents occur, water operators respond quickly to investigate and remedy the cause.
- The disposal of cooking fats and oils to sewer can cause blockages when the fat congeals. Thames Water has completed a 'fat buster' trial in Windsor where special micro-organisms have been injected into the sewer to break fat deposits down which originate from fast food outlets. A review has also commenced to assess how waste cooking oil can be collected from restaurants, reprocessed and used as biodiesel.



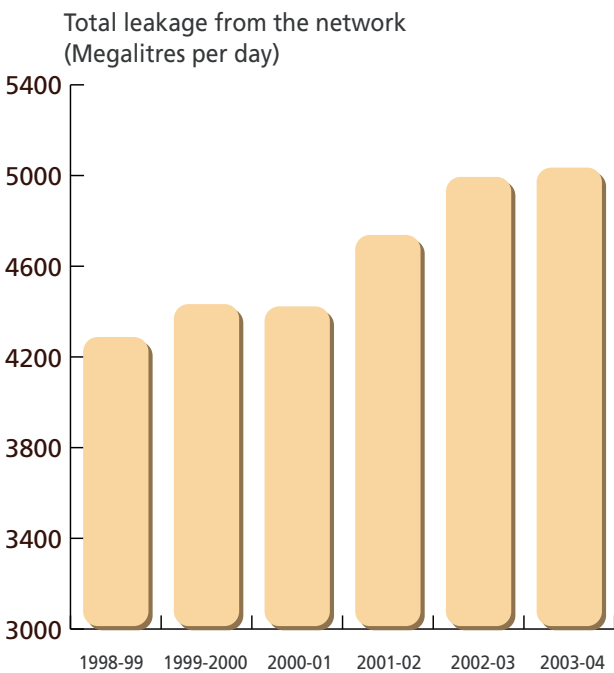
M5 Leakage

Leakage from the water network = 5,023 MI/day

Confidence: High

Energy and chemicals are used to deliver drinking water to customers' taps. These are wasted for the amount of water that does not reach its intended destination, as is the water itself. The lower the amount of water lost in distribution, the more efficient and sustainable the network should be. However, the water industry has over 350,000 km of water main, of varying age and condition and which is subject to many risks, some natural such as frost or land subsidence and others man-made such as construction works. The costs of detecting and repairing leaks can be higher than the costs of the water and the chemicals and energy used to put it into supply.

In 1997 Ofwat set water companies in England and Wales the medium term objective of achieving what it considered to be the economic level of leakage. For each operator, it set an annual target to be achieved



Aim

This indicator shows the progress water suppliers are making to address leakage from their distribution networks.

Results

The UK water industry put 18,660 MI/day of water into the distribution system in 2003/2004 and water lost through leakage was just over 5,000 MI/day.

The water industry responded positively to the leakage targets set and all but a few companies now report leakage levels better or in line with them, based on their own economic analyses. However the trend is still upwards, indicating that the economic level of leakage has now been reached in most cases.

Data were received from all operators. Confidence in it is high.

Best practice

- Sutton and East Surrey Water has one of the lowest levels of leakage in the country. Like other water suppliers, it offers a leak detection and repair scheme for domestic customers, explained in a code of practice. It constantly monitoring flows within the supply network to identify leaks, followed by quickly determining the exact location and arranging repairs.
- Operators continued to assist business customers to improve their use, reuse and disposal of resources. Severn Trent Water for example launched Network Guardian, a holistic approach to network management for industrial and commercial customers which focuses on leakage detection and repair.

M6 Investment in assets

Value of investment in different water industry assets

- **Water supply: £1.91bn**
- **Wastewater: £2.39bn**

Confidence: High

The water industry uses an extensive infrastructure to provide services to customers. This has to be maintained and extended to meet the needs of existing and new population centres. The level of investment in different parts of the industry's infrastructure - water treatment, water distribution, wastewater treatment and sewage treatment - provides the context for its performance in these areas of activity.

Aim

This indicator shows the level of investment in clean and wastewater infrastructure.

Results

During 2003/2004, £1.91 billion was invested in the water supply part of the business. £973m was for distribution mains and a further £472m for water treatment works. £214m was invested in water resource facilities, £56m for service towers and reservoirs and £42m on pumping stations. £157m was for general water management.

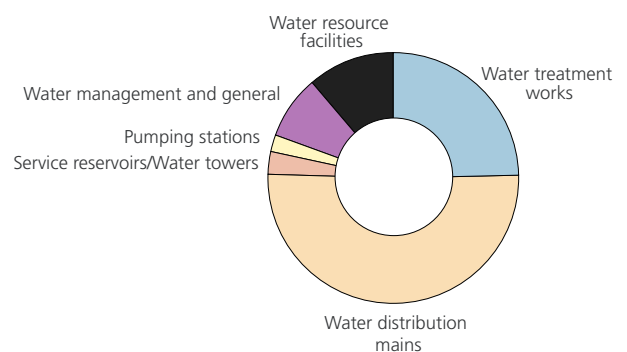
There was £2.39 billion investment in wastewater facilities over the year. £1,043m of this was for wastewater treatment plant, £835m for sewerage facilities and another £270m for sludge treatment. £100m was spent on pumping facilities and £106m on sewerage management.

The statistics cover all operators and confidence is high.

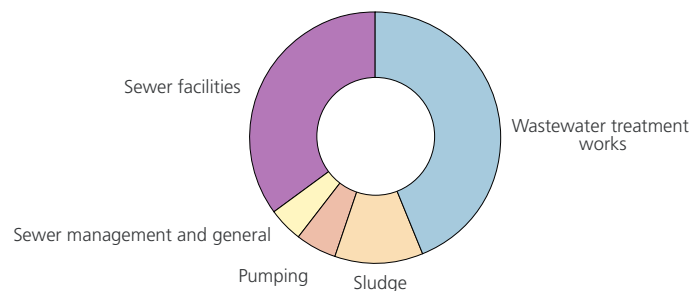
Best Practice

- There are many examples of good practice in investing in infrastructure throughout the industry. For example, South West Water commissioned the Ilsham Valley Pumping Station in Torquay, the final element of the major waste water scheme at Torbay, ensuring all continuous discharges receive secondary treatment before discharge. This scheme, part of the company's 'Clean Sweep' programme, serves a population equivalent of 210,000 and was one of the largest environmental improvement programmes of its kind in Europe.
- Some investments are based on otherwise redundant

Water supply investment



Wastewater investment



assets. For example, Scottish Water Waste Services, specifically created to develop existing and redundant assets across Scotland into waste management centres with available reception facilities, developed the Cowdenbeath Transfer Station in November 2003 from a redundant sewage works. This provides reception, storage and blending facilities for liquid waste: road tankers bring the liquid waste to the transfer station to be pumped through sewer for treatment at Levenmouth Waste Water Treatment Works. The station is estimated to save 94,000 transport kilometres per annum, a more sustainable environmental and local solution.

Theme F – Finance (financial capital)

There are different financial models for water operators in the UK. In England and Wales water operators are private companies subject to price review by Ofwat of the products and services they provide. Scottish Water, although managed and operated as a company, is in the public sector with annual revenue and borrowing caps set by Scottish Ministers. In Northern Ireland, the Water Service is publicly owned, subject to public sector borrowing requirements.

A key objective of sustainability is that a company's core functions are adequately financed. The financial performance of the water industry provides an insight into the long-term viability of its activities and the support that it can attract from its financial stakeholders.

Ofwat has a duty to ensure that the water companies in England and Wales have access to sufficient finance to carry out their functions properly.



F1 Financial viability

Operating cash flow = £4,478 M

Amount of interest paid = - £776M

Confidence: High

Water operators need a sufficient cashflow to maintain existing services to customers and to finance capital investment programmes. Like any industry, water operators depend on borrowing from the financial markets as well as income from customers for the products and services provided.

The ability of the water industry's cashflow to cover the repayments on the interest from its debt provides a basic measure of the degree to which both public and private sector utilities are able to maintain their operations. It is one of the key indicators used by Ofwat and the Water Industry Commissioner for Scotland.

Aim

This indicator assesses the sufficiency of the industry's cashflow to repaying the interest on its debt.

Results

In 2003/2004 the UK water industry had a cashflow of £4,478 million on its operations. This was higher than in the previous year (£4,415m). It received £320m in interest payments (twice last year) but paid out £776m in interest (£370m in 2002/2003) and a further £61m in interest on financial lease rentals.

Data were received from all UK operators. They are collected for the industry's economic regulators and confidence in them is high.

Best Practice

- As a result of the Welsh Water business model, customers' bills of 2003/04 were £11.5m less than the Ofwat price cap for 2003/04. This volunteer bill rebate was worth £9 to each customer.

F2 Sustainability accounting

Indicator under Development

The water industry's sustainability performance needs to be set in a financial framework that records the range of costs and benefits arising from its activities. This would help to highlight the importance of sustainability to the industry's financial backers.

Aim

The indicator is intended to show the extent to which the range of internal and external costs and benefits arising from utility sustainability activities are included in financial accounts.

Best Practice

- Wessex Water, the first water company to adopt reporting of environmental accountability into its financial annual reports (in 2001), monitors performance against the targets that it has set in its "green accounts". It has also produced its Sustainability Vision, which illustrates the level of sustainability it would like to achieve and the mechanisms required to get there.

annex I

Sources of Information from the Water Industry (website links)

Water UK	www.water.org.uk
Eureau	www.eureau.org
UK Water Industry Research Ltd (UKWIR)	www.ukwir.org.uk
Anglian Water Services Ltd	www.anglianwater.co.uk
Bournemouth & West Hampshire Water plc	www.bwhwater.co.uk
Bristol Water plc	www.bristolwater.co.uk
Cambridge Water plc	www.cambridge-water.co.uk
Dee Valley Water plc	www.deevalleygroup.com
Dŵr Cymru	www.dwrcymru.co.uk
Essex & Suffolk Water plc (part of Northumbrian Water Ltd)	www.eswater.co.uk
Folkestone & Dover Water Services Ltd	www.fdws.co.uk
Mid Kent Water plc	www.midkentwater.co.uk
Northern Ireland Water Service	www.waterni.gov.uk
Northumbrian Water Ltd	www.nwl.co.uk
Portsmouth Water plc	www.portsmouthwater.co.uk
Scottish Water	www.scottishwater.co.uk
Severn Trent plc	www.stwater.com
South East Water plc	www.southeastwater.co.uk
South Staffordshire Water plc	www.south-staffs-water.co.uk
South West Water Ltd	www.swwater.co.uk
Southern Water	www.southernwater.co.uk
Sutton & East Surrey Water plc	www.waterplc.com
Tendring Hundred Water Services Ltd	www.thws.co.uk
Thames Water Utilities Ltd	www.thameswateruk.co.uk
Three Valleys Water plc	www.3valleys.co.uk
United Utilities Water plc	www.unitedutilities.com
Wessex Water Services Ltd	www.wessexwater.co.uk
Yorkshire Water Services Ltd	www.yorkshirewater.com

Government and Regulators' Websites

Department for Environment Food and Rural Affairs (DEFRA)	www.defra.gov.uk
Drinking Water Inspectorate (DWI)	www.dwi.gov.uk
English Nature	www.english-nature.org.uk
Environment Agency	www.environment-agency.gov.uk
European Commission	europa.eu.int/comm/index_en.htm
Health & Safety Executive (HSE)	www.hse.gov.uk
Joint Nature Conservation Committee (JNCC)	www.jncc.gov.uk
Northern Ireland Department for Regional Development	www.drdni.gov.uk
Office of Water Services (OFWAT)	www.ofwat.gov.uk
Scottish Environment Protection Agency (SEPA)	www.sepa.org.uk
Scottish Executive	www.scotland.gov.uk
Water Industry Commissioner for Scotland	www.watercommissioner.co.uk

annex II

Acknowledgements

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Roger Trengove	South West Water
Robert Turner	
David Wilkinson	Anglian Water
George Wood	Severn Trent Water
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