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Municipal reform needed to halt water services decline in eastern Europe and central Asia

The quality of access to water and wastewater services in the countries of eastern Europe, the Caucasus and central Asia (EECCA) has deteriorated in recent years, and municipalities should introduce clear separation between utility and municipal administration in order to address this, a conference on financing in the region has heard.

The OECD conference was held in Yerevan, Armenia in November and brought together economy/finance, water, and environment ministers from the EECCA region along with representatives of OECD countries, international organisations, the private sector and civil society. The conference heard that the overall situation regarding service provision remains 'critical', but that there are positive experiences emerging that potentially be replicated to bring improvements across the region.

The conference heard that energy costs and unaccounted-for water are two to three times higher in EECCA countries compared to OECD countries. Furthermore, investment is said to be only 10-20% of that required to maintain and renew existing water infrastructure.

The conference highlighted in particular the key role of local authorities, which were called on to develop the political willingness to undertake reforms. Furthermore, they should set consistent and stable objectives for the water supply and

sanitation sector, elaborate realistic finance strategies to achieve these objectives, and to translate these into rolling, medium-term investment programmes, rather than the annual programmes that many municipalities currently follow. Local authorities should also clarify the responsibilities of utilities and municipalities, preferably through the corporatisation of utilities and the establishment of performance-based contracts between these parties.

Peter Börkey, head of the water sector reform programme the OECD-backed Environmental Action Programme Task Force, commented: 'The trend in terms of the legal and institutional reforms that have been undertaken are broadly positive... One thing that we have noted, and ministers have confirmed in Yerevan, is that the reform process at the local level is very, very slow. [This is] particularly in terms of one of the key recommendations from the guiding principles [adopted in 2000] which was to go for a corporatisation of water utilities and a clear separation of the utility from the municipal administration. There has been very little progress.'

Ministers recommended that the issue of water supply and sanitation should feature on the agenda of the 2007 'Environment for Europe' Ministerial Conference, which will take place in Belgrade, Serbia and Montenegro. ●
(See Analysis, p5) **Keith Hayward**

Initiative seeks progress on African regulation

Work is underway to complete the first phase of an initiative seeking to help African water sector regulators improve services to the poor, following a workshop held in Nairobi at the end of October.

The initiative is being carried out by Building Partnerships for Development, and the written outputs of the work will include presentations of action plans based around four case studies.

BPD began work in March of this year with case study work taking place in Mozambique, Zambia, Kenya and Rwanda. The work has looked at issues such as whether regulators should concern themselves with small-scale informal suppliers, at the use of civil society groups for monitoring utility performance, and the role of regulators in supporting regulation in marginalised areas outside of their official remit.

The Nairobi meeting brought together four regulators and stakeholders over two days to discuss and refine action plans. The plans were then presented to a mixed group of Kenyan stakeholders and donors.

According to David Jones of BPD, there were also discussions on a working group to allow

participants to keep informed of each other's progress and to continue dialogue between the four countries.

BPD hopes that a second stage of work will allow some of the initial findings to be put into practice by the case studies.

Work to improve regulation of water services is clearly timely. A report released in November by Consumers International claims that African consumers are generally not happy with the way water, electricity and telephone services are currently being regulated all over the continent.

The report, 'Consumer protection and quality of life in Africa through competition and regulation: 2004 report', analysed the perceptions of African consumers regarding the effectiveness of national competition policy and evaluated consumer perceptions of the quality of services offered by public utilities, particularly in the water, electricity and telephone sectors. The report also includes the African Consumer Protection Index, a tool to provide a comparative measure of the effectiveness of consumer protection policies across different countries. ●

Keith Hayward

EDITORIAL

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Water Utility Management International is a new publication focusing on the needs and interests of senior water utility managers. The aim of this publication is to provide those heading water and wastewater utilities with an international reference point on the strategic issues affecting their organisations. Water Utility Management International will also be of value to consultants and others following developments in this area.

Presented in a newsletter format, Water Utility Management International will contain news, interviews, and in-depth briefings on topical issues. Other articles will take an executive briefing approach or be based on landmark case studies. Regular themes for articles will include financing, investment, regulation and personnel matters. There will also be a central theme of achieving efficiency in water utilities, encompassing topics such as benchmarking, billing, tariffs, IT and service standards.

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Affordability concerns in the UK

The body representing consumer views on water in England and Wales is attempting to stir debate on the issue of affordability by highlighting differences in approaches across the UK.

The Consumer Council for Water (CCWater) has drawn attention to the announcement by government that in Northern Ireland, where water services are in public hands, those on low incomes will pay no more than £180 (\$320) a year regardless of the value of the home they live in. The aim is to guarantee that eligible low-income households will pay no more than 3% of their income on water and sewerage charges. CCWater contrasts this with the situation in England, where water services are provided by private companies and where payments can represent as much as 7% of disposable income.

According to CCWater, government's intention in Northern Ireland is that the protection of the less well-off will be funded by public expenditure, rather than the bills of other customers.

Andrea Cook of CCWater commented: 'There is no reason why the least well-off in society should be treated differently in England and Wales simply because they are serviced by a privately owned water company.'

According to CCWater, single old age pensioners receiving pension support in the south west of England

may be paying around 7% of their disposable income on water charges.

'The government should use this initiative as a precedent for fresh thinking on water affordability in other parts of the UK,' Cook added.

The comments came just as the government announced a study on water affordability. The study is to be carried out in the south west of England by Eaga Partnership, which will be responsible for fieldwork, and WRc, which will be responsible for evaluation of the project.

The pilot exercise will be based on work with customers of South West Water. An initial six month phase starting early in 2006 will involve carrying out checks of the government benefits received by low income households and installing water meters and water efficient devices. There will be twelve months of monitoring, with results expected in the middle of 2007.

Meanwhile, the Water Industry Commission for Scotland (WICS), headed by Sir Ian Byatt, has announced that increases in household bills there will be restricted to 0.5% below the rate of inflation between April 2006 and March 2010. Based on the current inflation rate, this will restrict rises to 2% per year, giving Scottish Water the third-lowest bills in the UK. Up to 120,000 low-income households will have their bills reduced by up to 25%. ●

Loans and tenders

TUNISIA: Loan agreed for public water utility

The World Bank has agreed a \$38M loan to the National Public Water Supply Utility (SONEDE) of Tunisia for an urban water supply project. Tunisia has achieved the highest access rates to water supply and sanitation services among middle-income countries in the MENA area but faces specific sector challenges including increasing demand and scarce resources.

The project aims to sustain the reliability and quality of water service in Greater Tunis and selected urban centres, through increasing, upgrading and renewing the water supply infrastructure and enhancing the competitiveness and sustainability of SONEDE's operations.

BULGARIA: Joint support for Rousse

The European Bank for Reconstruction and Development has announced a project, subject to approval in February 2006, to provide finance to upgrade and expand water and wastewater infrastructure of the Rousse Regional Water Company and to improve its financial and operational performance. The project is designed to complement EU ISPA (Instrument for Structural Policies for Pre-Accession) grant investment finance. The Bank will focus on renovation of the water transmission main, while ISPA grant funds will be used for water and wastewater infrastructure investments, including a construction of a new wastewater treatment plant. The proposed project would be the second ISPA co-financing of a local water utility following the financial close of the Bourgas Water and Wastewater project in June.

AZERBAIJAN: ADB signs loans for water and sanitation

The Asian Development Bank (ADB) and the government of Azerbaijan have signed two loans worth \$30 million to help improve water supply and sanitation services in the regional towns of Agdash, Goychay and Nakhchivan. The loans will finance institutional reform and capacity-building activities, including the establishment of new utilities as joint stock companies with modern managerial skills, providing efficient and financially viable long-term operations. ADB will also provide a special grant of \$500,000 from its Japan Special Fund to help support sector-wide institutional reforms.

YEMEN: Dutch government agrees rural water supply funding

Yemen's General Authority for Rural Water has signed an assistance agreement with the Dutch government that will provide YR 941 million (\$250 million) for rural water supplies. The money will pay for 34 projects in the Taiz, Ibb, Hajjah, Abyan and Hodelda governorates.

COLOMBIA: World Bank approves Cartagena project

The World Bank has discussed the findings of an independent inspection panel looking into the Colombia-Cartagena water, sewerage and environmental management project. The Bank has provided an \$82 million loan for a project that aims to improve water and sewerage services in Colombia's coastal city of Cartagena. It is also intended to improve the sanitary conditions of the poorest population, and facilitate the environmental clean up of water bodies surrounding the city among other works.

Water giant to withdraw from UK and US

After just a few years of ranking number three in the global water business, Germany's RWE AG has announced its decision to sell its UK and US water companies. The disposals of RWE Thames Water and its current subsidiary American Water are planned for completion during 2007, though the form of sales have yet to be decided.

While RWE will now primarily focus on 'converging' European electricity and gas markets, the company will not quit water altogether. Through its German-based RWE Aqua, the company will retain its water and wastewater businesses in Berlin, Budapest and Zagreb.

However, RWE will sell its Spanish company Pridesa along with RWE Thames water. Its desalination skills will be needed for Thames Water's plans to build a plant in Becton, near London, explains RWE chief executive officer Harry Roels.

American Water and RWE Thames Water together contributed about €4.1 billion to RWE group's total external sales last year, equivalent to about 10%. They also provided €1.4 billion, or 23.2%, of RWE's total operating profit. In 2004, the companies accounted for €1.5 billion, or 43%, of group total capital expenditure. ●

(See Analysis, p6) **Peter Reina**

Business

QATAR: Wastewater design-build-operate contract award

The State of Qatar Public Works Authority has awarded a joint venture between Degremont and its Japanese partner Marubeni a ten year design, build and operate (DBO) contract for the country's largest wastewater treatment facility.

The DBO contract is Degremont's first for wastewater in the Arabian Gulf and the award fits with the company's plan to expand from its core business into plant operation for large cities.

The 135,000m³ per day plant will serve 500,000 people and is expected to come into service in the middle of 2008. The plant will feature Zenon Environmental's ZeeWeed membranes for tertiary treatment. Located 20km west of Doha, treated effluent will be suitable for reuse in agricultural irrigation.

The \$180 million design and build part of the contract will be undertaken as a 50:50 joint venture, while the \$80 million operation will be on a 70:30 basis in favour of Degremont.

NEW ZEALAND: DBO to deliver wastewater for Mangawhai

A \$20 million contract for the Eco Care Wastewater Project for Mangawhai in New Zealand has been awarded to US company Earth Tech, its first design, build, operate project in New Zealand. Earth Tech will design, build, and operate a complete wastewater system for Mangawhai township, a popular beach resort located in a sensitive estuary and marine environment north of Auckland. Earth Tech will operate the scheme for 15 years in partnership with the Kaipara District Council, including collection, pumping, treatment and disposal of all wastewater.

UK: Progress on water sector competition

Ofwat, the economic regulator for the water companies of England and Wales, has revealed the names of the first three entrants to be given clearance to compete with existing water companies for the business of companies using over 50 megalitres of water per year. Two are part of existing water businesses: WaterCall is linked to South East Water, while Severn Trent Water Select is associated with Severn Trent. Neither can operate in the areas where their parent companies provide services. The third company, Aquavitae UK, is owned by a Jersey-based equity capital company. Another six companies have indicated they will apply for licences in the coming months, according to Ofwat. Ofwat's director general Philip Fletcher also revealed that he has applied for the post of part-time chairman of the Water Services Regulation Authority, which takes over from Ofwat from April next year.

MANILA: Company plans to raise capital through loans

The Manila Water Company, one of the two water concessionaires for the Philippine capital, has said it plans to raise \$30 million to \$40 million

MOROCCO: Seminar focuses on utility training

A seminar in support of Morocco's water, power and sanitation utilities was held in Rabat last month. It was organised jointly by the European Investment Bank (EIB) and InWEnt (Internationale Weiterbildung und Entwicklung), a German development cooperation agency that specialises in training, in close collaboration with the Moroccan Ministry of the Interior. This seminar was the first stage in a training programme focused on utility management and organisation. It was aimed at identifying needs with a view to effectively targeting future training. Three pilot utilities will also be analysed in greater depth.

SCOTLAND: Utility must deliver further improvements

Scotland's Auditor General has issued a report on Scottish Water's performance that says it has made a good start but can implement further improvements. The report notes that since its creation in 2002 the combined water authority has improved its efficiency and performance, including cutting its workforce by nearly 2000. However, the report adds that Scottish Water can improve efficiency and performance still further. Also, the most recent report from the industry's regulator found that the organisation fell short of the customer performance of water companies in England and Wales. (See Analysis, p4, and interview p23)

through loans next year to fund its 2007 capital spending programme. In a disclosure to the Philippine stock exchange the company said that it will start negotiations for the loans next year. The company said that at the moment discussions are at an exploratory stage. Manila Water is part of Ayala Corp and serves five million residents in the eastern part of Metro Manila.

CHILE: Agbar sells stake in Aguas Andinas

Spanish newspapers have reported that water group Agbar, which supplies Barcelona, could raise up to \$550M by floating 49.9% of its shares in Inversiones Aguas Metropolitana (IAM), the controlling group of Aguas Andinas, which serves 1.3 million people in the Chilean capital Santiago. Aguas Andinas is 80% indirectly owned by Agbar. The offering had been due to go on Santiago's stock market

ARGENTINA: Companies bid for Formosa project

Two companies have put in bids to run a \$21M potable water project to improve the supply system in Argentina's north-eastern province of Formosa. The first part of the project includes construction of a new water treatment works and a second aqueduct, while a second bidding process will involve upgrading the water distribution system. Formosa city's existing water treatment works produces 55,460m³/day of water, while the new facility will be able to produce 145,200m³/day, an increase of 260%.

TAIWAN: Joint venture wins major wastewater contract

Singapore's Darco Water Technologies has announced that, together with a unit of Taiwan's LeaLea Group, it has won a \$50M municipal wastewater contract in Hsin Chu city, 80km south west of Taiwan's capital Taipei. This is the country's largest wastewater project to date. The turnkey design-build venture involves the construction of a wastewater recovery system with a capacity of 30,000m³/day, for the Ker-Ya municipal water resources recovery centre. Darco will construct the water treatment process and related mechanical and electrical work, while its partner Leader Construction will carry out the civils elements.

BOLIVIA: Government seeks to buy Cochabamba water company stock

The Bolivian government is to try to buy the outstanding stock of Aguas del Tunari, the water supplier for the city of Cochabamba, to avoid a multi-million dollar settlement to the utility, whose contract was cancelled in 2000. Basic services deputy minister Eduardo Rojas said the state would buy the stake of the majority shareholder rather than pay an indemnity of \$25 million agreed by the International Center for Settlement of Investment Disputes (ICSID). Aguas del Tunari went to arbitration claiming that Bolivia appropriated assets worth \$25 million when it terminated the concession ahead of schedule. Bolivian authorities rejected the compensation claim, saying that the damage was caused by civil disturbances.

The good and not so good of Scotland's road to reform

Scotland's water industry was radically reshaped in 2002, but more detailed reforms are taking longer to implement. **LIS STEDMAN** reports on the findings of a recent audit of the utility there.

Scotland's Auditor General has issued a report on Scottish Water's performance that says the unitary water authority has started well but that more improvements can be made.

Scottish Water was set up in April 2002 as a 'public corporation of a trading nature'. In this role it is expected to behave as a commercial enterprise, in that it should cover its costs from the charges levied, but it has no shareholders and does not pay dividends in the same way as the privatised companies in England and Wales.

The basic remit on unification was for the new authority to make the Scottish water industry more efficient and competitive, improve value for money as a result of economies of scale, and harmonise charges across the country by no later than 2005/06.

The report notes that since its creation in 2002 the combined water authority has made good progress in merging the three previous authorities into one and improved both efficiency and performance, significantly cutting operating costs and meeting its financial targets.

The report adds: 'Scottish Water has made some progress in improving the efficiency of its capital investment programme to upgrade and replace its assets. It still faces significant challenges in delivering this programme to 2006 while achieving the efficiency savings demanded by the Water Industry Commission [the industry's economic regulator].' As

will happen in England and Wales next year, the single economic regulator has been replaced by a board.

Scottish Water's current £1.8 billion (\$3.2 billion) capital investment programme has a deadline of April 2006 and it is estimated that £253 million (\$450 million) worth of work will remain to be undertaken at that point. Meeting the deadlines of the capital investment programme is essential for future performance and efficiency gains.

Audit Scotland is to undertake a separate study of the issue of achieving the capital programme and will report on this in late 2006.

The report adds that Scottish Water can improve efficiency and performance still further. It notes that while the body has set a sound base for strategic and business planning and performance reporting, it can do better there as well.

The authority also improved water quality and cut its workforce by nearly 2000 during the audit period, from 5648 in April 2002 to 3756 by April 2005. Staff severance costs amounted to £84.8 million (\$150 million) of the £183.6 million (\$326 million) restructuring and transformation costs.

Scottish Water has met most of its customer performance targets, the report found, but performance still falls short of that found in the water companies in England and Wales.

Drinking water and surface water quality has also steadily

improved since the early 1990s – the number of coliform tests not meeting the standards at customers' taps in 2004 was 7.7% that of the figure in 1991.

Much of the improvement is attributed to Scottish Water's (and its predecessors') efforts to refurbish service reservoirs and upgrade or replace smaller water treatment works. Improvements in surface waters are due to investment in wastewater treatment works.

The report also touches on regulation, noting that robust regulation is appropriate for a public services monopoly, but adding: 'Those involved need to cooperate to ensure transparency and to minimise the regulatory costs. In particular there is a need to develop a clearer understanding of how Scottish Water's core costs are attributed between different customer groups and services, and to ensure that Scottish Water submits accurate information to the Water Industry Commission.'

'It is important that any customer service targets and performance indicators which the Water Industry Commission sets provide a full picture of Scottish Water's performance so as to enhance regulatory transparency and provide clarity for stakeholders.'

This note reflects the tussle over the authority's 2002 strategic review, which was delayed because of objections from Scottish Water that eventually led to the appointment of a reporter to review its submissions and costings, in the hope of fostering

better working relationships between the service provider and its regulator.

In other areas, the progress of the transformation programme set up to unite North, East and West of Scotland Water is reported to be going well. In all, 32 of the original projects are complete and a further 13 have been identified.

The report notes that the authority has responded well to a series of targets set in the auditor's 2001/02 report, having either addressed them or being in the process of addressing them. These required Scottish water to compile a consolidated fixed asset register, carry out a review of its fixed assets, formulate an infrastructure maintenance plan, harmonise non-domestic income systems, review debt management arrangements and control the harmonisation of its financial systems.

The auditor also reports that Scottish Water has developed robust corporate governance arrangements, complying with the requirements of the relevant Scottish legislation specifically enacted for this purpose. 'The auditor considers that Scottish Water's financial stewardship is sound, with robust systems of internal control,' the report adds. ●

See the interview with Scottish Water's chairman, Professor Alan Alexander, on page 23.

Tempting investment in the EECCA region

Lack of investment is one of the central reasons why water and wastewater services of the countries of eastern Europe, the Caucasus and central Asia continue to decline. **KEITH HAYWARD** looks at one of the messages emerging from the recent conference in Armenia – that investment in the sector could now resume in the region.

According to the economy/finance, water, and environment ministers gathered at the OECD conference on financing of water and wastewater in the EECCA region held in Armenia in November, there are three reasons that should prompt investors to resume work in the region.

The first is that the recent upturn in GDP growth and household income in most EECCA countries provides a more favourable context for the financial recovery of the water sector.

The second is that the institutional and legal context in which such investment would take place is becoming more favourable. Examples provided include a law on concessions recently adopted by the Russian Federation that is said to significantly reduce risk for investors and a new water code in Armenia that is said to bring significant improvements to the legal situation.

The third reason given is that there has been an increase in the involvement of private sector operators in countries such as the Russian Federation and Armenia. Domestic private operators are said to supply around 40% of Armenians, while domestic companies in Russia have established contracts in more than 20 large cities. All of this, the ministers say, provides an indication that the financial position of water utilities has improved.

All of this sounds promising, and certainly there is a need for major investment: some €7000 million a year is needed for operation, maintenance and investment to achieve the water-related Millennium Development Goals of halving the number of those in EECCA without access to safe drinking water and basic sanitation by 2015, representing about double the current level of funding available. This said, there are significant reasons for limiting any optimism about how rapidly

investment can be accelerated. In particular, the conference highlighted slow progress in reform at the municipal level as being one of the most important obstacles to improved provision of urban water supply and sanitation services. Related to this, there is still much work to be done, for example, in order to facilitate financing of improvements. An issues paper prepared for the conference noted that public budgets will be essential in most countries, particularly for capital costs. Fiscal transfers from central and regional authorities to the local level have an important part to play and such transfers should be designed to provide a predictable stream of revenues and incentives for sound financial management at the local level.

The issues paper describes reform of the relationship between local governments and service providers as being 'critical'. Rather than utilities being departments within local government, the paper points to international experience as having demonstrated that policy and regulation should be separated as functions from service provision. Performance contracts between municipalities and utilities are said to be 'helpful' in clarifying the roles and responsibilities of the two sides.

Perhaps the biggest note of optimism arising from the conference is that there is an increasing number of positive experiences on which to draw. Examples include Surgut and Yaroslavl in the Russian Federation and Yerevan in Armenia. The important features of such experiences are that the municipalities have adopted plans with clear objectives and have identified the means for achieving them. In some instances it has even been possible to take on debt to finance improvements, although such cases are 'very much the exception' in terms of what has been achieved. Alongside this, the

Environmental Action Programme (EAP) Task Force, that the OECD supports, and other institutions now have a considerable range of tools available to support reforms. These tools include a computer tool (Feasible) that allows identification of realistic infrastructure development objectives, a multi-year investment planning tool for municipalities, and a toolkit for benchmarking water utility performance.

Such experiences offer the prospect that approaches can be scaled-up to achieve wider gains, but the challenges to which they must be applied in the region remain formidable. The situation in small and medium-sized cities is said to be 'much worse' than it was a few years ago, and this is without considering the situation in rural areas, where in many cases services are described as having 'collapsed'.

This point is emphasised by Peter Börkey, head of the EAP Task Force water sector reform programme, who notes that it is the larger cities who are best placed to secure investment: 'What is very clear is that big cities are going to fare relatively well, or many of them at least, certainly in Russia and maybe to a lesser extent in other countries. They clearly represent an investment opportunity for the private sector to the extent that the countries welcome the private sector in their countries, and they certainly also present an opportunity for International Financial Institutions and private banks.'

The situation away from the larger cities is less promising, as Börkey explains: 'Another thing that came up quite strongly in the conference was that the medium and small cities, and especially the rural areas, are essentially left aside at this stage. The water quality problems are much bigger than in the large urban areas and at the same time the financial challenges are also much more serious. Also,

there are no mechanisms in place at this stage to provide specific assistance to these areas, so that's a big challenge. There is a lot of work that needs to be done, especially in these areas, and clearly capacity constraints at the local level are a very big problem. They are problems in the big cities, but in the small cities it is even worse.'

Consequently, Börkey is more cautious about the prospects for investment outside of the larger cities: 'There we would be much more careful in terms of trying to spread optimism.'

This said, the message from the conference is that the ministers in the region nonetheless hope to stimulate external investment to complement the domestic investment that will be needed. While the positive experiences that are emerging serve to support this, Börkey draws attention to another factor that he says is acting to the contrary. 'An important point that came up is the overly optimistic picture that indicators on the water supply and sanitation Millennium Development Goals are painting – the indicators that the Joint Monitoring Programme of the UN is producing. These figures in fact obscure the fact that there is a very serious situation in the water sector... and that in fact the JMP figures are probably diverting official development assistance away from this region.'

This point is based on the fact that there is extensive infrastructure in the region inherited from Soviet times but that this is deteriorating. 'The challenge is more in terms of maintaining it, and the JMP indicators don't tell you anything about the quality of the water services that are being provided,' says Börkey, adding, 'These figures may create the impression in development assistance agencies that water is not an issue in this part of the world. So, I think the implications are in fact quite serious.' ●

RWE's return to its corporate roots

Running water and wastewater systems is becoming an increasingly local business as companies with a number of international operations returning to their corporate roots. RWE's reinforced interest in traditional activities is a landmark in this trend, reports **PETER REINA**.

The bubble of global water utility expansion burst some time ago, but the resulting retrenchment in the sector is still going on. In terms of returning to corporate roots, the recent decision by Germany's giant privately-owned utility, RWE AG, ranks as one of the biggest water sector divestments outside the realms of privatisation.

By planning to shed the flagship water companies it acquired just a few years ago in the UK and USA, RWE is dramatically ending an era of global multi-utility expansion. The company now concedes it can make better use of its cash and resources by concentrating on the business from which it emerged over a century ago in Germany's coal and industrial heartland.

Aiming to complete the sale of both companies by 2007, RWE will first relinquish American Water, either through a stock market flotation (IPO) or sale to a single corporate buyer or to a group of them. While the long regulatory process runs on, RWE will, meanwhile, turn its attention to the larger British subsidiary, which now controls the US operations from London. RWE will then concentrate on the seemingly more rewarding European electricity and gas markets.

RWE will reward its owners by sharing some of the sales proceeds with increased dividends in the next two financial years. The company also sees benefits for the UK and US companies, partly through greater transparency in their operations. The subsidiaries' financial accounts are now subsumed in the group's reports.

But early reactions from the credit rating agency Standard &

Poor's pointed to at least one drawback. Without the financial muscle of RWE behind them, the credit ratings of the future companies will diminish, according to S&P. The potentially increased cost of borrowing will be particularly marked for two companies which have substantial investment plans for their infrastructure over the next few years.

As RWE heads home to its core businesses, the large French operators Suez and Veolia remain almost alone in the international markets, largely through concessions or long-term contracts, notes Neil Beddall, a utilities analyst with a UK-based bank. The bullish sorties into emerging markets by other players, a phenomenon that started in the 1990s, have largely ended.

Unpleasant shocks in Bolivia, Argentina and elsewhere in recent years have helped stub out much of the earlier enthusiasm for territorial expansion and investment in the global water and wastewater sectors. The eviction from Bolivia of France's Suez and International Water further highlighted the pitfalls of operating in emerging economies. Even Chile, widely seen as a welcoming Latin American market, ceased to hold Thames Water's interest, leading it to its current sale of subsidiaries there.

And RWE's recent decision means that even such mature and stable markets as the UK and the US lack sufficient investor appeal when contrasted with other sectors. Until RWE's disposal announcement was made, the UK and US operations were depicted by water division executives as sources of stable, predictable income from mature markets with significant private sector activity and robust regulation. RWE now

flags these attributes as attractions to potential buyers.

The UK business is set grow over the next five years mainly through a 22.1% real, compounded increase in regulated charges to its customers. US growth is, additionally, dependent on diversification through taking on other utilities' outsourced operations under various contractual guises, such as design/build.

But water utilities are financially less attractive than providing other infrastructure service to the likes of RWE, notes Beddall. Producing roughly half the return on investment available from the electricity and gas sectors, Thames Water and American Water have failed to achieve internal rates of return targets set by RWE, he says.

Water operations are also greedier consumers of capital and generate negative cash flows compared to other sectors, adds Beddall. Last year, Thames Water and American Water were responsible for 43% of the group's capital investment needs, at €1.5 billion. In the five years from this April, Thames Water is committed to investing €5 billion on its system. Over the same period, US capital investment is set to reach €1.6 billion.

Meanwhile, last year, external sales of the two water companies accounted for nearly a tenth of RWE's group total, at about €4.1 billion. And they contributed €1.4 billion, or nearly a quarter, of RWE's total profit.

RWE now acknowledges that the hoped for synergies between the transatlantic water operations and its European energy businesses have been 'limited'. The original quest for global operations was misguided, concedes chief executive Harry Roels. 'Scale and synergy effects are regional in the

water business, not global,' he says.

Achieving such, now discredited, structural gains was among the goals defined by RWE when it took over Thames Water for £4.3 billion (\$7.7 billion) in 2000. RWE began the slow regulatory process of buying American Water a year later.

Already active in Latin America and elsewhere, and making inroads into the US, Thames Water was RWE's first global step. With Thames, the company was meant to 'enjoy increased growth opportunities and be able to meet their international ambitions much more quickly than on their own,' said a senior executive at the time. Because of the strategic ambitions behind the acquisition, RWE paid a substantial premium above market value for Thames.

The quest for American markets, north and south, then led RWE to pay \$4.6 billion for American Water, while taking \$4 billion of the utility's debt. That acquisition made RWE the largest company in the US regulated water sector. And it increased to 70 million the number of the group's worldwide water sector customers, making it the third biggest global water company after its two French rivals.

Now that RWE has decided to pull out of the global water business, the sector's structure is again being reshaped. What form it will take will remain a mystery until the identities and territorial ambitions of the buyers for the American and British utilities become known. But RWE will remain on the scene as a local player, retaining its Berlin and Zagreb operations. And, through its RWE Aqua, it will continue to bid selectively for multi-utility work with continental European municipalities. ●

The customer communication imperative

US utility research body AwwaRF has been supporting studies that both underline the importance of communicating with customers and provide insights into how to achieve this. **BILL McCANN** reports.

Recent research has revealed that nearly half of United States water utilities have no formal communications plan and no permanent communications director or senior manager responsible for public information.

For senior management in that half of the country's 46,000 water supply utilities, it is a statistic that carries a very important message, particularly when other research funded by the Awwa Research Foundation (AwwaRF) indicates that the customers who complain least and say they are best satisfied with service provision are generally those that are the best informed.

Linda Reekie, an AwwaRF project manager with a primary interest in this area of the Foundation's research activities, estimates that up to three projects on communication and customer relations have been sponsored in each of the last five years or so,

attracting an annual spend of around \$500,000 within the \$8M annual 'solicited programme' of research.

The solicited programme, she explains, is the agenda created every year with input from all AwwaRF subscribers. 'Our Research Advisory Council (RAC) reviews the input, rationalizes it, collates it and then makes recommendations to the Board each January,' says Reekie. That, she says, does not preclude the Foundation from backing collaboration on projects more specifically tailored to the needs of individual subscribers. For example, a report published this year on customer information systems resulted from a partnership study with the City of Cleveland Division of Water. AwwaRF provided matching funding.

The work provides utilities with guidance on the selection, acquisition and implementation of a customer information system. The published report includes a summary of best

practices and lessons learned and a 'roadmap' for actions.

All this effort – the Foundation's website lists 48 projects, 38 final reports and 14 project updates in the general area of 'communicating with customers' – has certainly exposed the need for good communication and advantages it can bring in terms of getting the customers on your side when it comes to initiating major projects or explaining why the intricacies of water treatment and service provision demand a hike in prices.

As one report on 'assessing customer perspectives' notes, 'Thirty years of customer satisfaction research have made it obvious that insight into customer perspectives is difficult, expensive and inherently uncertain.'

Just how difficult and uncertain is demonstrated in another research snapshot from a quite recent report dealing with chlorinous tastes and odours in drinking water. Elsewhere this is recorded, together with water pricing, as being one of the biggest areas for complaints to suppliers but, in this particular study, the gap between supplier and customer perspectives is truly exposed.

While most utility managers envisaged tastes and odours of chlorine as not very significant, their customers

'Those responsible for communication in a water utility must ensure that customers get reliable facts and relevant information by being strategic about what to say, how to say it, and when to say it.'

very definitely thought otherwise. The implications were also seen quite differently, with some 75% of utility managers believing that consumers associated the presence of chlorine with water safety whereas nearly half of all consumers (43% of the study sample) thought quite the reverse. Good communication clearly does have the potential to avoid misunderstandings of that sort and several of the funded studies substantiate that belief. In fact, they go further, showing that better informed customers are more confident of the safety and quality of their water.

One research survey showed that customers who considered themselves 'very informed' about water quality issues were two to four times more likely to say they were 'very satisfied' with their water utility than those who were not informed.

An interesting corollary here was that the tendency for understanding to

be associated with service satisfaction was emphasised in the analysis of all the respondents who said they had had no problems with their utility in the two years preceding the survey. In this group 93% who thought they were well informed expressed satisfaction with their service, whereas only 69% of those who felt they were 'not informed' thought their service was satisfactory.

Similar findings have been connected to the consumer confidence reports (CCR) that suppliers are obliged to issue to customers each year. But, although customers who read their CCRs were shown to have greatest confidence in water quality and safety, only a third of customers could even remember getting a CCR and fewer than half of those said they had read it closely.

As a method of customer communication, that roughly puts the CCR in the category of 'junk mail'. This points to the need for more refined strategies to get the messages across, a reality recognised by the researchers and in the more forward-looking utilities.

As one researcher has said, 'Just getting the message out there is not

enough. Today, communicators have to deal with the phenomenon of information overload because so many messages compete for the attention of the intended recipients. Those responsible for communication in a water utility must ensure that customers get reliable facts and relevant information by being strategic about what to say, how to say it, and when to say it.'

The Foundation's efforts of the last five years have been steadily building towards that end, using the earlier studies to provide the facts and, more recently, directing the research teams towards providing solutions.

Progress is being made. One consultancy extensively engaged in that work is Jane Mobley Associates of Kansas City (see box). The consultancy is currently engaged in the study 'Strategic Communication Planning for Drinking Water Utilities', due for publication in early 2006.

Writing recently in the AWWA Journal, another Foundation consultant, Roger Patrick, has pointed to one of the more serious repercussions of poor communication in terms of water supplier revenue. Quoting the results of some recent

customer surveys, he demonstrates the increasing tendency of the general public to get their water information – all of it – from the media rather than from their supplier. When headlines rather than facts are the priority, that is a worrying thought and the practical result is that, although public supplies rarely transgress the statutory standards and consumers generally express a high degree of satisfaction with their water quality, very many of them are turning to bottled water.

According to Patrick there has been 'a massive shift in drinking water consumption patterns', with around half of the total population now regularly drinking bottled or filtered water. Bottled water is said to have enjoyed a steady 10% annual growth rate over the last 10 years with no sign of any slackening. Indeed, Patrick presents an alarming statistic: 'At estimated retail prices, the amount paid by US consumers for bottled water is now similar to the total annual revenue of America's drinking water utilities.'

The results that can arise from poor communication are therefore clear to see, but so too are the positive results and the advances arising from the steady stream of Foundation-backed research.

As Kelly Reinhardt, a principal with Jane Mobley Associates, says: 'Through our research, we have certainly come across water utilities that have, for some time, been implementing well-planned and even strategic communication efforts. These utilities are very successful in gaining public support for rate increases, placement of new treatment plants, customer compliance with conservation initiatives and overall customer satisfaction (as demonstrated by fewer complaints).'

Linda Reekie is equally clear that the studies are set to continue. 'Communications are definitely on the radar screen for 2006. Our Research Advisory Council is going to recommend a couple more communications related projects for next year but they are not yet approved by the Board. We are not going to see a drop in funding for these customer-related and communication type projects, just because of the culture in which we live. Here in the United States customers increasingly expect excellent service and our customers are customers of other businesses, many of whom focus on exceeding customer expectations, so they expect similar from their drinking water providers.

And, post 9/11, there is much more focus on risk communication and communication during emergency events, so I expect to see more funding focused on those areas in future. ●

Impacting customer satisfaction through effective water utility communications

Jane Mobley Associates

Increasingly water utility executives throughout North America are recognizing that they must be well prepared to communicate the importance of water – its safety, quality, and availability – to their customers, to elected officials and to the general public.

Three of the key research projects that the Awwa Research Foundation (AwwaRF) has developed and supported and which have focused on understanding the process of communicating with customers are as follows:

'Customer Attitudes, Behaviour and the Impact of Communication Efforts' (contractor ETC Institute) investigated the effect of utility communication on customer satisfaction. Based on quantitative research findings, the project documented the types of information that customers want and need and the way they desire it to be communicated.

'Message Management: Effective Communication' (contractor Jane Mobley Associates) identified common public relations issues faced by drinking water utilities and methods that can be applied for assessing a utility's current communication capabilities and developing a communication plan based on those capabilities. The project research resulted in a Communication Planning Workbook that provides tools to assist a water utility in assessing its current communication capabilities and developing a basic communication plan based on those capabilities.

'Strategic Communication Planning for Drinking Water Utilities' (contractor Jane Mobley Associates; in the publishing process at AwwaRF), examines communication planning at a higher level than tactics. By linking communication planning to other utility-wide plans (business plans, capital improvement plans), a utility can concentrate on a strategic focus to determine the communication strategies that can best help it reach those goals. This project resulted in a more comprehensive representation of communication than its predecessor and culminated in the development of a Strategic Communication Planning Guide that will serve as a checklist and evaluation tool for well-staffed utilities with existing formal communication plans and as a step-by-step guide for utilities to use to develop a formal plan where none exists.

Overall the findings from these three AwwaRF projects indicate that water utility managers understand the importance of communication planning and the role of communication in the overall success of the utility. The research also shows that the realities of managing a public (or private) drinking water utility often preclude the level of planning required to build and implement an effective and genuinely strategic communication plan.

The research findings and tools developed from these projects have not yet been widely available to drinking water utilities for a sufficient period to formally evaluate their effectiveness in achieving communication goals or improving customer satisfaction. But the research does indicate that persons who are informed about water quality and safety-related issues are more likely to report that they are satisfied with their water utility.

Affordability in eastern Europe: anticipating the impact of tariff reforms

As a major investor in eastern Europe, the European Bank for Reconstruction and Development is well placed to influence how the water sector develops. **KEITH HAYWARD** spoke with **SAM FANKHAUSER** about how the bank is evaluating the impact of its influence on tariff reforms.

The importance of tariff reforms in the work of the European Bank for Reconstruction and Development is clear. 'I can't think of any of our projects in the water sector where there wasn't in one way or another a tariff discussion, some policy dialogue on tariffs, some agreement to increase tariffs, some agreement to rebalance tariffs,' comments Sam Fankhauser, director of policy studies at EBRD.

It was just this centrality that prompted the study of the impacts of tariff reform that Fankhauser has recently completed with bank analyst Sladjana Tepic (see summary box). There were, he says, two elements to

the background to the work, which was sponsored by the UK Department for International Development. 'One was DfID feeling EBRD should pay more attention to the social issues of transition, so that prompted them to look around for social transition issues that they could get us to do. The second strand was that we do a lot of projects with utilities – power utilities, district heating, water utilities – and most of them involve tariff agreements with those utilities just to make those deals financially viable, bankable projects. We find that it is a difficult thing to agree politically, and we started worrying about what actually happens to poor consumers if we put tariffs up very steeply.'

Undertaking the work had its

challenges, particularly in terms of gathering data. 'It is very easy to come up with an average number and say the average household pays so much for water, but that is not interesting. What you need to know is how much do vulnerable households pay for water and electricity. Then you start having a data problem.' Here he points to lack of knowledge about how much poor households consume and what their real income is.

This is compounded by the way the water and district heating sectors in particular are set up, something that presents a challenge just as much to governments as it does to analysts such as Fankhauser. 'If you look at water or district heating, that is usually municipal level regulation,' he says. 'Tariffs differ from one town to the next, and the regulatory capacity and the data differ from one town to the next. That really becomes difficult because of the disaggregation, of the lower capacity you have when you go one level of government down.'

One aspect of the study was to present an assessment of the current situation with respect to affordability. 'If you are slightly flippant about it, you can say currently affordability is not all that much of a problem, but it is not a problem for the wrong reasons,' says Fankhauser. 'It is not a problem because tariffs are way too low and there is, particularly in the CIS, a high incidence of non-payment. So you can afford whatever you want if you don't pay for it.'

The current assessment is however primarily a starting point for looking at likely future impacts of tariff reform. 'Once you start assuming that everybody pays, you start finding problems in the poorer countries in terms of affordability,' says Fankhauser. 'Once you start assuming the tariffs go up to cost-recovering levels, then you start finding that you have affordability problems in a wide range of countries.'

This does not mean tariffs should not be reformed. 'We make a point of

saying that affordability problems are not an excuse to delay tariff reform, because if you don't do tariff reform you can't rehabilitate your system, you can't reinvest in them, and that is bad for poorer people as well as industry and for average customers as well,' says Fankhauser. 'So you have to do that to get the money back into the sector to run it properly.'

According to Fankhauser, there is still a substantial need for tariff reforms in the region. The new EU members and the accession countries of Bulgaria and Romania are, he says, fairly well advanced. In contrast there are the countries of the former Soviet Union and the western Balkans. In Russia, for example, he says tariffs are acceptable in some towns but that 'those are little islands in a big ocean of water tariffs that are too low and where payments are not enforced'.

This raises the real prospect of affordability problems, and there is a question then of how to address such problems. 'We think you have to invest and improve social safety nets, benefit payments, targeted water subsidies, or subsidies for those who can't afford it,' explains Fankhauser. The problem here is that countries may well not have the institutional capacity to set such systems up. 'In many countries it is very hard to set up institutions that are able to identify who the poor households are and reach them and provide assistance,' he adds. This would mean resorting to other mechanisms such as lifeline tariffs where a basic amount of water is provided for free or at very low cost to all.

Similarly, Fankhauser believes that ideally there should not be cross-subsidy between user groups, such as between industry and domestic consumers, so that there is full cost recovery within any particular group. Again this poses the problem of institutional constraints. 'Given that that social benefit system is very difficult to set up, in many countries we are happy to live with a certain amount of cross-subsidy and a lifeline tariff sort of regime, but that is something of a second best, taking into account the first best is institutionally impossible.'

All this clearly points to a need for improvements in the ability for transition countries to provide social benefits. The countries need support in this, but Fankhauser says the type of support needed is somewhat outside the usual realms of EBRD's activity. 'Traditionally I think the division of labour has been that the social type of issues have been the comparative advantage of the World Bank. Our comparative advantage was working with the utilities, so we have not been good at looking at social safety nets,

improving them. It is still the case that we would prefer to do it alongside somebody that has a comparative advantage in it.'

Fankhauser does however see that the bank has a role to play. 'What we are quite happy to do is work with regulators and construct lifeline tariffs that meet the social safety requirements that we have. That is something that requires talking to regulators and utilities, which we are good at.'

Publication of the study does not mark the end of the bank's work in this area. 'We have plans to refine the analysis, and we intend to maintain the database and the model on which it is built and to use that for the projects that we have got over the next few years,' explains Fankhauser. Alongside this, he hopes to improve the data quality. 'Certainly in the water sector

and in district heating, it would be interesting to add more municipal data points rather than country average data points. It would also be good to have better data on actual water consumption - a lot of it had to be extrapolated.' He also thinks it would be valuable to expand the work to include all utilities.

In the meantime, Fankhauser sees the research as having a constructive input to the way the bank works. 'One of the objectives of the research was to influence the way we look at our projects. We now know much better what the affordability consequences are, and I think that influences the way we look at tariff conditionality, the way we look at social safety nets, and we assign more importance to them than we did, say, two years or 18 months ago.' ●

Analysing affordability in eastern Europe

The EBRD study on affordability considered the 27 countries of central eastern Europe and the Baltics (CEB - the new EU member states), south-eastern Europe (SEE - three EU candidates and countries of the Western Balkans) and the Commonwealth of Independent States. The need to improve services in these countries with economies in transition raises the prospect of higher prices and improved payment collection. However, the report notes that 'surprisingly little' is known about the affordability of infrastructure services such as water, district heating and electricity. Household survey data was used to look at how low income households and other vulnerable groups might be affected by such changes.

The study sought to assess affordability in terms of the amount spent on the three services in comparison to total household expenditures. Where this was not possible affordability was assessed in comparison to household income. The benchmarks used for the affordability ratios, i.e. the maximum percentages of household expenditure considered affordable, were 10% for electricity, 10% for district heating and 5% for water and wastewater.

Currently, average payments for the transition countries are generally no more than 6% to total expenditures for electricity, 8% for district heating and 3% for water. However, the analysis is based on actual utility payments. This means, for example, that there will be inaccuracies due to non-payment of bills. 'Tariffs tend to be lowest and the payment discipline worst in low income countries. As a consequence, affordability issues will often be least visible in the countries with the highest incidence of poverty,' the report notes.

The study also examined current payments of lower income households and found that poorer households spend considerably more on electricity, heating and water than average consumers. Water affordability was found to be most problematic in Russia, due to inefficient consumption and widespread poverty, and in Hungary and the Slovak Republic, where there has been 'aggressive

tariff reform'.

The study also assessed the likely impact of achieving full payment at current tariffs. The effect in the sector studied, electricity, would be most marked in the CIS, where expenditure on electricity as a percentage of total household expenditure would rise from around 4% to almost 7%.

Of particular interest is the assessment made in the study regarding future affordability. Forecasts were made using EBRD economic predictions and on the basis of a scenario in which tariffs were adjusted to achieve full cost recovery by 2007. This would lead to a peak in the affordability ratios in 2007, after which the proportion of expenditure spent on the three services would decline steadily.

This assessment found that the steepest increases in affordability ratios would be seen in the water sector, where the biggest adjustments would be needed. Expenditure on water would exceed the benchmark values in a number of countries. This includes most CIS and SEE countries, where expenditure on water would account for more than 10% of household expenditure - double the benchmark figure.

An alternative assessment was carried out. This assumed that full cost recovery was delayed until 2010. The authors argue that this demonstrated that delaying tariff adjustments may not be an effective way of mitigating the social impact of tariff reform.

A further assessment was carried out to evaluate the likely impact of tariff reform on pensioners and social benefit recipients. This showed that such groups are vulnerable to tariff reforms.

The authors conclude that tariff reform should be complemented by targeted measures to mitigate the social consequences of the reform.

Can poor consumers pay for energy and water? An affordability analysis for transition countries, by Samuel Fankhauser and Sladjana Tepic. European Bank for Reconstruction and Development Working paper No. 92, May 2005.

Contract incentives for programme delivery

In a drive to deliver its investment programme at lower costs, the UK's Anglian Water is handing over much of the work to a team comprising its own engineering staff and staff from a select group of suppliers under a contract structured to encourage efficiency. **KEITH HAYWARD** reports on how the contract has been set up and on early progress.

One of the main features of the water industry in England and Wales is that investment plans for the industry as a whole are set on a five year cycle. The latest, known as Asset Management Plan round 4 (AMP4), runs from 2005 to 2010. With the sector also being dominated by just ten service providers, this means that investment is concentrated into a relatively small number of very substantial blocks.

One such block is the latest five-year investment programme of Anglian Water Services (AWS). The company serves some 2.6 million properties in eastern England. At £1.4 billion (\$2.4 billion), the programme represents a significant potential source of business for those working in the sector. At the same time, investment on such a scale presents the water company with the potential for rationalising the way it procures these goods and services.

Anglian attempted to achieve savings in its procurement process during the previous spending round, AMP3. This was done by setting up partnering arrangements, which avoid the need for suppliers to bid for individual jobs. Such an approach is also used more widely in the sector in England and Wales. However, there was clearly still room for improvement, as Anglian's Dale Evans explains: 'When we looked at the supplier base in the Anglian region there were a large number of suppliers working on the programme but through multiple delivery routes. We have even got examples of suppliers who worked for five capital partners under different terms, different conditions, different risk profiles and different arrangements. That clearly doesn't give the supply chain a chance to deliver real value to the

Anglian programme.'

Evans explains that Anglian faces the prospect of having to deal with issues such as a rising number of additional properties being developed in its service area each year. Alongside this the industry regulator Ofwat set the limits for customer charges over the AMP4 period on the basis of the companies having to be more efficient in the way they deliver services. 'There are stretching capital efficiency targets to be delivered. They vary across the whole programme. In some areas there are efficiency challenges of about 5% from the AMP3 baseline, in others it is as high as 30%. It is probably one of the

'If we don't get the right behaviours then we will change the contract.'

most significant challenges that the Anglian Water business faces.'

Given these pressures, Anglian has taken a more radical approach for AMP4, bringing its own engineering function together with teams from a selected group of key suppliers to create the Anglian Water Alliance. This has been tasked with delivering the bulk of Anglian's capital programme as Evans, who is the Alliance operations director, explains: '[The Alliance] is a strategic service provider to AWS, and it is set up to function as a joint venture. At the start point it has been given around 60% of the capital programme for Anglian Water. We've taken into the Alliance the previous AWS engineering function and put it alongside six appointed partners, who range from consultants (Carl Bro and Black & Veatch), to two design and construct partners (Skanska and Bewater) and

then Barhale and Balfour Beatty providing utility contracting. And the approach is very much that as we get programmes of work, we take a 'best-for-the-task' approach as to who delivers the programme. That means best organisation, best team, and best individual. So while it is six separately appointed partners, it is very much a joint venture and functions as a service provider to Anglian.'

Creation of the Alliance is the outcome of a process in which Anglian identified six somewhat jargonistic key strategic values to shape its approach: alignment (between the needs of AWS and what the Alliance provides); integration of value chain (particularly to squeeze out inefficiencies from the procurement process); programme visibility (maintaining a focus on the overall programme rather than individual projects); collaboration (between all the parties); incentive-based model (setting up arrangements that provide incentives); and risk management (improved systems for addressing risk).

Evans explains that the contract structure was then built around these core values. 'The process was really [to ask] what sort of incentives do we want, what sort of behaviours do we want, and then [to identify] how can we put a contract together that enables that.' And the structure is not necessarily fixed. 'If we don't get the right behaviours then we will change the contract to provide the right arrangement and generate those behaviours,' he adds.

A further point is that this process is being supported by a new approach to information management. In particular, a document management system from BuildOnline has been brought in. 'Information integration is a key enabler to us,' says Evans. 'We are

looking for access real time. We are looking for a platform that makes all of that accessible to all parts of the supply chain – something that does that dynamically and proactively.’

The Alliance is governed by a board with representatives of each of the seven partners. A management team has been formed in the same way. Evans comments that the sub-programme teams are then ‘genuinely formed on a best-for-the-task basis’. AWS issues a mandate for a programme of work. The Alliance then develops a solution and presents that back to AWS for approval. As part of this process, AWS sets target costs for the programme elements based on industry benchmarks. ‘The Alliance takes that knowing the target costs are fine, knowing there are no compensation events or variations against that target cost, and develops solutions accordingly,’ explains Evans. Where a piece of work is delivered at below the target cost, half of the savings are allocated to a pooled programme fund. The remaining half is then split equally between AWS and the team responsible for that piece of work. Conversely, if a programme element is over budget, the additional costs are met from the pooled fund. ‘At any one time you could have one team on one programme contributing to the programme pool and another team on another programme funding their overexpenditure from that programme, so everybody’s return is dependent on all of the other parts of the Alliance. That is what drives the collaborative behaviour we are looking for and that drives towards best practice,’ says Evans.

The Alliance started on its work for AWS earlier this year. Some 350 employees of the Alliance partners have been brought together in a central office, and over 300 people have been trained on BuildOnline. The Alliance has so far been mandated £350M (\$610M) of work to run until early 2008, £90M (\$160M) of which relates to 2005, and Evans hopes that by March next year it will have work mandated to run over three to four years. ‘We are in a key phase where we are now moving on a whole raft of projects from design out into delivery. That transition is taking place very quickly, and we have got solutions approved by AW,’ explains Evans. While it is early days, he is confident the Alliance will deliver the desired efficiencies: ‘The early indications are that we are meeting the commercial challenge. That is evidenced by the costs we are putting forward, and there is quite significant evidence that we have reduced delivery times quite significantly through that completely integrated team approach.’ ●

Starting reforms to Finnish regulation

Municipal water and wastewater service providers in Finland face similar prospects for change to those working elsewhere. **PAUL GARRETT** looks at how these pressures may impact on regulation in the country and at how the industry views these prospects.

One of the important features of the water sector in Finland – one that is also a characteristic of the sector in other countries around the world – is the degree of fragmentation that exists. The country has a population of a little over five million. This is currently served by 1500 water utilities across the country. Most of these are very small, together serving 25 per cent of the population. The next 200 large utilities serve another 25 per cent. A further 25 larger companies serve another 25 per cent, and then the five biggest utilities serve the remaining 25 per cent.

Such fragmentation presents a potential driver for change, given the possibilities for savings from consolidation. Alongside this, water industries all over the world are to a greater or lesser extent facing up to the inevitability of change that comes with embracing a degree of private sector culture. While few countries would risk taking the option the UK took in 1989 of fully privatising their water industry, many do see a greater role for private sector investment.

Together these drivers for change present the need for regulation of the sector to change as well. In the case of Finland, such regulatory change is likely to be in the context of municipalities remaining the owners of water utilities while being one of several

agents of water regulation. At the same time they are likely to have a remit to allow public and private utility models to operate and make reasonable profits.

Water regulation in Finland covers the use of surface or groundwater, quality of drinking water, quality of wastewater, quality of service, and the financing of the water industry. But although municipalities have a central role, other agencies have an important role to play.

Regulation of the use of water and its abstraction rests with the three Environmental Permit Authorities. These agencies grant permission for the abstraction of groundwater over the amount of 250 cubic metres a day. They also grant permission for surface water abstraction where the use of water has the potential to cause harm to the environment.

Drinking water quality is regulated by the Ministry of Social Affairs and Health. It uses as its criteria for drinking water quality the parameters laid down in the EU Drinking Water Directive, and monitoring of tap water quality is supervised by local health authorities.

Management of wastewater quality, based on the Environment Protection Act, rests with three types of agencies. Large discharges of more than 4000 population equivalents (PE) are licensed and monitored by three Environmental Permit Authorities. Medium sized discharges of between

100 and 4000 PE are regulated by 13 Regional Environment Centres. And small discharges of less than 100 PE are regulated by local environment authorities.

Relations between water utilities and customers are regulated by the Water and Waste Water Services Act. This is supported by additional competition and consumer legislation. Under the Act the municipality has the responsibility to ensure that water services are available.

Most water utilities in Finland are owned by municipalities, with the utilities having their operational area fixed by the municipality. They currently make up 90 per cent of Finland's water industry, but the number of joint companies embracing more than one municipality is increasing as the industry consolidates. Small companies owned by customers or co-operatives make up between 5 and 10 per cent of the sector. There are currently no private investor-owned water utilities. Full privatisation of water is not and has never been on the agenda in Finland. As for public-private partnerships, the only current long-term contract is a joint-company wastewater treatment plant owned 80 per cent by the private sector and 20 per cent by the municipality. Most of the effluent treated at the plant comes from one large dairy.

In terms of financing of Finland's water utilities, there is full cost recovery – all the costs of water services are covered by fees paid by customers. Water charges, which are decided by the utilities themselves, are divided into three component parts – connection fee, cubic metre fee and fixed fee, the cubic metre fee being the most important component. Owners of water utilities have the right to take 'a reasonable profit', and are only subjected to price controls when customers make a complaint. Utilities mostly support investment

Water in Finland – some facts

Finland, with a population of 5.2 million people and the seventh placed GDP out of the 15 old EU member states, has a water industry which supplies 350,000,000 cubic metres of water a year, representing an annual turnover of €900,000,000. Although there are more than 1500 water utilities operating in the country, the five biggest serve 25 per cent of the population.

Finland is a land of forests and lakes. Lakes cover 33,547 square kilometres of the country. While 60% of drinking water is drawn from groundwater, lakes are a significant source for abstraction. The Helsinki region uses water from lake Päijänne for drinking water purposes and Tampere draws water from lake Roine. Some smaller towns also use lakewater. Lakes are also an intrinsic part of Finland's hydro-electric generation industry. Important rivers include the Vuoksi, Kemi, Tornion and Kymi. The town of Turku uses riverwater from a small river, the Aura, and the town Oulu draws from the river Oulu.

The impact of European Directives

According to the Ministry of Agriculture and Forestry, which is Finland's leading water resource authority as well as being responsible for the safety of the country's hydro-electric dams, 'European water Directives will have a significant impact on Finnish environmental legislation and the administration and management of water resources. The conditions up in the north (of Europe) differ in many ways from those in Southern Europe. Thus the implementation (of Directives) in an appropriate way under Finnish conditions and legislation is a major challenge.'

In the context of compliance with European Directives the Ministry also identifies priorities for water policy as 'the development of the water supply network in small communities and sparsely populated rural areas, flood prevention, and the regulation of waters and management of man made waters' in conjunction with the hydro-electric power sector.

The Ministry is also 'actively involved in international water policy and co-operation. Finland is engaged in regular and development co-operation concerning frontier waters with neighbouring countries (Sweden, Norway and Russia), based on treaties signed between states'. Finland also participates in regular discussions with fellow members of the Council of the Baltic States with regard to wastewater discharges into the Gulf of Bothnia and Baltic Sea.

themselves, with only 5–7 per cent of investment coming from state funds.

Every customer in Finland has a contract with its water utility. The terms of these, covering delivery and tariffs, are drawn up by the Finnish Water and Waste Water Works Association (FIWA), which represents the industry, in co-operation with the municipal association and the Finnish Consumer Agency. These contracts are supervised by consumer authorities and competition authorities. Operational supervision comes from municipal environment authorities and regional environment agencies.

FIWA's policy on water liberalisation is unlike that seen in, for example, the UK. It sees water services as a natural monopoly, but also favours the municipal, local nature of water utilities. Having said that, FIWA supports the consolidation of water utilities through the merging of municipal utilities to form regional utilities owned by a number of municipalities. In this its consolidation policy is not unlike that currently taking place in The Netherlands.

But FIWA says that, while it 'accepts customer-owned companies and co-operatives' and accepts 'reasonable profit', it is 'worried about privatisation', although some sort of public-private partnership 'is a possibility' in the future.

So the current picture of water in Finland is one of fragmentation with the promise of consolidation. Furthermore, only with the advent of consolidation among the mostly municipally-owned utilities is there now any prospect of a more joined-up regulatory model.

As the water industry consolidates so Finland may consider consolidation of the regulatory structure to match. One suggestion is to subsume the economic regulation of water services into the

current Energy Market Authority, which already regulates the energy sector, to form a Utility Market Authority. Another option is to establish a National Water Regulatory Board, and a third is to strengthen the regulatory remit of the municipalities.

The Finnish Competition Authority for its part does not see any need to tighten the current regulatory structure unless water privatisation happens, meaning this does not look likely in the short or medium term.

Also there is no economic need to privatise water in Finland as there was in the UK in the 1980s, and no obvious sign of underinvestment. Potential threats to the water environment include municipal wastewater and effluent from the country's giant paper and pulp industry, but the water industry in Finland regards agriculture as being the biggest threat to water quality. Without a radical overhaul of ownership and structure, Finland may for now be content with minor adjustment of its regulatory system rather than a radical overhaul.

Rauno Piippo, FIWA's managing director, believes however that water regulation can evolve. 'The possible future regulation of water by state authorities is still quite open,' he says. 'The state authorities are interested in developing the economic regulation of water further. I think they are waiting to see if Finland's water utilities themselves are able to create their own benchmarking for performance, and then after that decide what more the state authorities need to do in terms of regulation.'

'I don't think the state wants an endorsement system for water fees – but it might want to influence price setting further,' he adds. But from a regulatory viewpoint it seems the watchword in Finland is very much evolution, not revolution. ●

Nor Akunq – the utility pioneering Armenian water sector reform

Reforming any water utility can be a challenge, but this is particularly the case when the utility in question is acting as a focus for wider national reforms. Over the last six years, the new Armenian regional water utility Nor Akunq has been at the heart of reforms of the country's water sector. **STEPHANIE MEADE** reviews progress with a decentralised approach under which similar utilities are now being established in other regions.

The reform of water utilities in transition countries is intricately linked to the larger process of sector reform. Institutions in the water sector mature together with the development of utilities. In Armenia, the creation and maturity of the regional water utility Nor Akunq (New Spring) has paralleled the development and depoliticization of the water sector in a symbiotic relationship. The decentralization of the sector and establishment of an institutional framework paved the way for creation of the utility. Since its creation, the utility has driven sector reform and pioneered the tariff-setting process, culminating in a debate around the issue of affordability. This has placed the utility, and the institutional consultants contracted with the specific mandate of supporting its creation, at the forefront of Armenian water sector development, particularly in the process of tariff setting.

The need for sector reform

Armenia, with a population of three million, was pushed into independence in 1991 with the dissolution of the Soviet Union. A severe economic crisis gripped Armenia in the years following the break-up and the early and mid 1990s saw high unemployment,

negative growth, and soaring inflation of nearly 2000%. The war with Azerbaijan to the east and the economic embargo with Turkey to the west compounded the crisis. Additionally, chronic energy shortages had a deep impact on all aspects of social and economic life, including the provision of water.

The macroeconomic situation began to improve in 1995. Armenia became part of an International Monetary Fund stabilization programme and the country received large amounts of foreign aid. In addition to bilateral and multilateral assistance, the six million Armenians living in the Diaspora contribute generously to economic and social development. GDP grew to US\$3.5 billion in 2004, up from US\$1.3 billion in 1994. The positive growth enabled the government to reduce the large budget deficit from 51.9% to 2.6% (as a percentage of GDP). However, despite improvements, poverty is widespread, with 51% of the population living below the national poverty line (all statistics are from World Bank, www.worldbank.org).

While about 95% of the population in Armenia is connected to centralized water supply, water is supplied mainly on a scheduled basis, averaging between two and eight hours per day. Only 13–15% of Armenian households enjoyed 24 hour water service in 2002. Outside the capital, water service

provision was especially poor, sometimes with days without water. Cases of cholera were also appearing from contaminated supply. Only about 40–60% are connected to centralized wastewater services (statistics relating to water supply and wastewater are from OECD, www.oecd.org/dataoecd/28/22/34650614.pdf). The centralized Armenian Water and Sewerage Enterprise (AWSE) that owned and operated the majority of the utilities across Armenia failed to provide adequate levels of service, and the infrastructure for water was deteriorated. AWSE was not a reliable foundation for a new regional utility as it was poorly managed, provided inadequate supply quality and quantity, and operated with a permanent deficit. Sector restructuring was critical.

A decentralized approach

The German Development Bank, Kreditanstalt für Wiederaufbau (KfW), became involved in the development of the Armenian water sector in 1998 and encouraged the concept of decentralization (the World Bank and KfW are the two major donors in the water sector. The World Bank supports the reform of water supply and wastewater services in Yerevan). Together with the Armenian government, it initiated a pilot water and sanitation project in the Armavir region, 50 km outside the capital. The regional utility was based on the decentralization concept, where the responsibility for operation of water and wastewater services would be transferred to the level of local self-administration, which was a new concept in Armenia following the previously centralized public service structure of the Soviet Union. Decentralization gives the municipalities greater responsibility over water supply and prevents the national government from brandishing too much influence.



Picture credit:
Sebastian Schienle,
MACS.

The goal of the project was to create a sustainable utility, providing customers with a clean water supply 24 hours a day. The project was set up based on the understanding that it would be embedded in major sector reform. However what proved interesting is how much the utility guided the pace and structure of reforms. The institutional framework for water and wastewater was weak or non-existent and there was no basis for good governance in Armenia. Characteristic of highly centralized regimes of transition countries, decision-making in Armenia was the domain of the national government, and the municipalities had little influence. From its creation, Nor Akunq challenged this traditional structure.

Nor Akunq was founded in June 2000, with twelve regional municipalities and the national government contributing AMD 10 million (approximately US \$19,000) in foundation capital. The municipalities controlled 66% of the shares, and the national government 34%. It was foreseen that as the financial situation and capacity of the municipalities grew, they would come to take over all shares. An international general director was selected to manage the utility during the initial project phase, as investment measures were undertaken, in order to build local capacity and minimize political influence and corruption until the utility attained sufficient capacity for a local general director.

The creation of a decentralized utility only became possible with the establishment of clear institutions in the water sector. Under structural adjustment measures supported by the World Bank, political responsibility over the water sector became more formalized and in March 2001 the State Committee of Water System Economy (SCWE) was established. With the creation of the SCWE,

decision-making over the sector was centralized under one body, where previously it had been divided under three ministries, thereby eliminating inefficiency and contributing to sector development. The SCWE also became the institution with authority over all water supply and irrigation institutions, namely AWSE, representing the Armenian Government as shareholder of Nor Akunq. Following the creation of the SCWE, a new Water Code was adopted by the Armenian Parliament, which created the regulatory framework to govern the sector.

Utility development and tariff setting

To support the growth of the utility, an intensive capacity-building programme was undertaken to build local capacity in commercial and technical operation and management. The utility developed a company charter, organizational structure, balance sheet, chart of accounts, an innovative billing software, and an investment programme which included the installation of water meters in all households and businesses. Collection efficiency was quite low, at 30% initially, as a culture of payment did not exist. Improving collection efficiency became a major challenge in the development of the utility, which after three years improved to over 80% in 2004 through persistent marketing efforts and disciplinary measures (legal proceedings) against customers who were reluctant to pay.

Tariffs in Armenia were traditionally set very low, following the Soviet model. As a result, service provision and maintenance of the water supply infrastructure was poor, and customers often used private sources to secure sufficient water supply. Arriving at economically viable tariffs that are affordable to customers was a complex and political process. The tariff must be set high enough to recover operational costs, without exceeding affordability and within the bounds of

political popularity.

The tariff concept for Nor Akunq foresaw a step-wise increase in the tariff, in line with the investment programme from €0.17/m³ to €0.48/m³ (AMD 300/m³) by 2007. Tariff levels were the same both for households and industries, due to the low level of cross-subsidization was not a consideration. Although the initial tariff of €0.17/m³ including tax, was far below cost coverage level, tariffs would increase on a yearly basis as the infrastructure for water supply improved, thus reducing water losses and bolstering revenue (see figure 1). Water losses were a huge revenue drain for the utility, as they were as high as 90%. The tariff concept would enable the company to recover costs and generate sufficient revenue to be sustainable in the future, while maintaining the bounds of affordability. The utility was not required to pay back investment costs, as the responsibility for this was assumed by the national government.

As Figure 1 illustrates, the tariffs of AMD 100 (€0.17) and AMD 150 (€0.23), are far below cost coverage levels. It is not until 2007, when the tariff is foreseen to rise to AMD 300 (€0.48), that the company begins to make a profit.

Shortly before the company was due to raise the tariff, the SCWE assigned a national body to govern the process of tariff-setting in the water sector. Previously, the Regulatory Commission for Natural Monopolies had only overseen the energy sector, but its authority was extended to the water sector as well. This was a huge step in the depoliticization process as the Commission was designed as an body independent from government to oversee the tariff-setting process, as well as issue water use permits to non-competitive water suppliers according to the provisions of the Water Code.

Nor Akunq was the first water utility in Armenia to apply to the Commission for a tariff increase. It pioneered the process, and drove the tariff discussion on a national level, grounding the increasing political debate in the socio-economic context. Although the Commission was designed as an independent body, in practice it was heavily influenced by political considerations, as Armenia is in a very early phase of depoliticization.

Affordability

Affordability became the central argument around the tariff increase. The Commission argued the current tariff was not affordable, and any increase would be politically unpopular; therefore they sought an

Macroeconomic overview

Population:	3.0 million
GDP growth (2004):	10.1%
Gross domestic investment / GDP (1993/2004):	9.9% / 24.2%
Export of goods and services / GDP (2004):	33.1%
Aid per capita (current US\$ 2003):	81

even lower tariff than the current one. Cost coverage was not a central criterion for the Commission, whereas it was a necessity for the utility. Failure to increase the tariff would undermine the development and sustainability of the utility. The Commission was not governed by economic reason, making any discussion of a cash flow to prove the necessity for a tariff increase ineffective. Therefore, it was necessary to prove the affordability of the tariff, which was demonstrated through a household survey on affordability and income.

The survey revealed that customers would pay even more than current levels for good water supply and could also afford to do so. The average will-

the total expenditures were €75/month (less than total income reported as it is common for inhabitants to underreport income, making expenditures a far more reliable measure). Applying the 5% criteria to the Nor Akunq customers, customers would be capable of paying on average €3.69/month (2400 AMD) for water based on their expenditures. With the foreseen tariff of €0.48/m³ (300 AMD) by 2007, customers would not have to change consumption patterns to compensate for higher prices. They could even consume 1.4 m³ more than they were currently consuming, up to 8m³ per month or 78 l/c/day.

The survey verified that customers were willing and capable of paying an

Consumption and tariff

Inhabitants per household:	3.2
Average household consumption:	6.6 m ³ /month
Current tariff levels:	€0.17/m ³
Anticipated tariff levels (2007):	€0.48/m ³

ingness to pay was €1.54 per household per month (1000 AMD) and 9% of customers were willing to pay more than this. The average bill per household at the time of the survey was €1.27/month (828 AMD).

Furthermore, customers in the areas where water supply investments had already occurred and who receive between 18-24 hours of water service daily are more willing to pay more than those with less water. Also, customers report they consume on average 58 l/c/day, which equals 6.6 cubic meters per month per household.

International benchmarks estimate that the monthly cost of water should not exceed 5% of total household expenditures per month. On average

increased tariff for their water supply, proving that the issue of affordability was overstated by the Commission for political concerns. (Although it must be stated that indeed a group of poor who cannot afford to pay do exist, and this group must be targeted through state subsidies.) In the end, the tariff increase amounted to €0.23/m³ (AMD 150), a compromise between political and economic considerations.

As a result of the survey and the discussion process around the tariff, the Commission was pushed to create a methodology to support its tariff recommendations. The development of a tariff methodology was a positive step for sector development, as clear economic guidelines for determining

Affordability

Average price of water bill:	€1.27/month
Willingness to pay:	€1.54/month
Capability to pay:	€3.69/month
Average income:	€54/month per household
Average expenditures:	€75/month per household
76% of respondents report they had enough money to pay their utility bill;	
24% reported difficulty in paying the bill due to low income levels;	
5% could not afford to pay their bill	



Picture credit: Sebastian Schienle, MACS.

tariff setting in the water sector were established for the first time. With the creation of the methodology, the Commission moved closer to having a sound economic rationale for tariff decisions.

Conclusion

Nor Akunq drove the sector discussion in Armenia. The elaboration of a tariff methodology and discussion of affordable and economically viable tariffs on a national level were a direct result of the process that the utility pushed through its own development. The survey results proved that the discussion around affordability of the tariff was exaggerated for political reasons, as customers were both willing to pay more than the current tariff and capable of paying much more.

Nor Akunq became an important model for water sector development in Armenia. It pioneered the process of establishing a regional water utility and KfW is currently following the lessons learned at Nor Akunq to establish two more regional utilities. The process of tariff setting was grounded in a sound methodology based on Nor Akunq experience in navigating the tariff increase. Today, Nor Akunq has developed into a functioning utility that supplies 15,000 households with local management and a staff of over 100. However, as the sector develops, the government's commitment to the decentralization concept remains questionable as it increased its shares in Nor Akunq to 51% from 34%, exhibiting more influence over utility development. This goes to show that water sector development in Armenia is still nascent and unpredictable. Communication and participation of all stakeholders are key elements to continue to drive the discussion forward. ●

Figure 1
Cost recovery and tariff levels (AMD 650 equals €1)

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San Diego's IT key to cost savings

A distributed control system developed for the City of San Diego that has brought substantial cost savings from integrating operations and maintenance is starting to be used elsewhere. **LIS STEDMAN** reports.

It must be every utility's dream, to be able to have a seamlessly-integrated operations and management system that enables control of virtually every aspect of the entire workload and reduces costs at the same time.

One solution that seems to be heading very much in that direction is Comnet – short for Central Operations Management Network. Developed in the US by consultancy MWH with the City of San Diego and now being put to use by MWH in the UK, the system 'provides true pin-point control, management of chemicals, strategic control and management of utility power and has resulted in more than \$52M of savings in under three years,' its creators say.

The savings relate to the first Comnet project, where the solution was devised in the mid-90s for the City of San Diego's wastewater utility. San Diego, sitting right on the Mexican border in the south of California, is one of the fastest growing cities in the US, blessed as it is with a perfect climate and excellent beaches.

Back in the mid-90s the city had a population of 1.9 million, a figure which the city council recognised would grow considerably. Serving this population at the time was one large wastewater facility processing 940MLD and spending \$84M each year on operational costs including labour, consumable chemicals and suchlike.

Bernard Gaus, who was project director on the Comnet project in San Diego, says: 'After Comnet was complete, the city had four wastewater facilities – it added three new ones – that treated around 990MLD. Even with a 400% increase in its assets the operational budget is \$75M and staffing has gone from 333 to 315.'

Comnet is effectively a nerve centre for hundreds of square miles of pipes and facilities, all capable of being operated by a single individual from one site. It is essentially a giant communications networking programme that can be operated through electronics, ethernet, microwave or telewaves, highlighting potential wastewater facility problems, ensuring that there are no closures or stoppages.

Comnet allows seamless control and

monitoring of the facilities from any location – the main central control is known as ComC (Central Operations Management Centre), says Mr Gaus. Beside the usual monitoring and control systems, it takes on board security networks such as CCTV cameras and fire alarms, as well as handling document management, storing digital images of manuals and undertaking predictive maintenance procedures. It also acts as a central historical database enabling exhaustive trending and prediction, and provides a training simulator that can be used to get staff up to speed before they are put before a 'hot' keyboard on this powerful system.

Mr Gaus notes: 'People are amazed that from one screen it is possible to look at processes, maintenance and security cameras.' Comnet is what is referred to in the US as a distributed control system, distinguished from SCADA as being effectively a connected system on one site rather than, as is common with SCADA, a system with many offsite components. So effectively Comnet is enabling a range of facilities some distance apart to be controlled as if they are one site.

'The owner wanted that,' Mr Gaus notes. 'They knew they wanted to simplify operational costs and increase interchangeability of operators, so that there is a seamless transition from one plant to another, there is one look and feel.'

In this respect San Diego is unusual in that it has set out to create a uniform 'cookie cutter' look and feel to its works, using the same makes of equipment – from flow meters to fire systems – in each. This was possible because three of the works were completely new and designed for the system and the existing wastewater treatment works was radically refurbished and updated to come in line with the whole Comnet look and feel. 'It's one of those situations where you talk to a maintenance person and they say "how did they do that?," says Mr Gaus.

Tendering for the Comnet project began in earnest in 1995, and by 2001 all of the plants were in operation. Over that six year period Comnet was phased in, with the first facility

operational in 1998 and the upgrade to the old works following the next year, followed by the two other new works.

The system has recently been expanded by adding 90 offsite SCADA sites, mainly offsite sewer collection monitors that have been brought into the system using radio links. This is run on the system like any other data.

'The other unique thing is that the information is not location-dependent,' notes Mr Gaus. 'It is person dependent. If I am the chief and I am in some far out facility, because of who I am I can go into the system and have full facilities available. The system knows what I want and pushes information and reports to me.' Push technology is becoming very much the 'must-have' thing of the information generation, anticipating the requirements of a fast-moving society.

Comnet has, naturally, sparked considerable interest. The project is ongoing and experts from over 30 countries have so far travelled to southern California to see the solution in action. The system has allowed the utility to create centrally-managed facilities that deliver state of the art water reclamation, biosolids production and co-generation at best cost. This is particularly important to San Diego, one of the US's most significant naval bases, which has a large proportion of retired military officers both in its city council and in the city itself, all conscious of the need to ensure costs are kept low.

The city of Detroit is also looking at the system, as its existing one is in need of change. The main difficulty for most utilities, Mr Gaus points out, is that they have a wide range of very disparate sites and management systems that are much harder to integrate in the way that San Diego did. However, that has not prevented interest in the system, particularly in the UK.

Based on this work, United Utilities and other water utilities in the UK are piloting Comnet for their own systems. It is currently being used by UU in the UK for its incineration facility at Shell Green, Runcorn. This involves controlling large numbers of facilities and components from pipelines to wastewater plants.

MWH principal engineer Phil Smith says that the Shell Green project proves that Comnet can be applied successfully to situations where the systems are not brand new or completely interchangeable, as in San Diego.

'Part of what we are doing is increasing the incinerator capacity so that United Utility can burn all of the sludge produced at Shell Green – at the moment a proportion of it is disposed

of to land,' he says.

There are, of course, considerable differences between US water companies, which by-and-large have a restricted geographical focus, and a giant multi-utility like UU, which may have four thousand different systems in its area. 'It provides opportunities, but it is very different,' adds Mr Smith.

Applying Comnet to Shell Green should give much greater control of the way the sludge comes in and is processed, the way chemicals are used and the way electricity is monitored and used. 'Having all the consumables under automatic control is the way to achieve the best, finely tuned plant, rather than having one operator decide it should be one way and another say it should be done another way.'

On the operational side, installing Comnet will mean putting in more control systems so that the operations are as efficient as possible. MWH anticipates a basic £500,000 (\$893,000) a year saving, which it is committed to. 'We think there may be more savings, but until we do more trials it is difficult to guarantee,' Mr Smith says.

The pilot is in its sixth month and is due for completion in just over a year. The project is considered a 'proof of concept' pilot for the whole of UU, and if the work is a success – and it looks like it will be – it is likely that it will be extended to other facilities, though the future is not firmly established yet. Plants will have to be looked at on an individual basis to see whether there are efficiencies to be made.

Comnet may also allow some labour efficiencies, in that it may make it easier for operational staff to do some basic maintenance tasks and vice versa. In terms of maintenance, MWH is now working on an integrated O&M process that will focus maintenance more intelligently – ensuring work gets done when it needs to be done rather than on a particular date or on the basis of number of hours' use.

Mr Smith adds: 'When you are talking about the size of equipment in facilities like this, the time spent on maintenance is a significant expense, as are the consumables. If things are done on a more analytical basis, that will help. At the same time you don't want to do anything that will decrease the life of the equipment or cause problems down the road.'

Other companies in the UK are interested in the concept he says, including Yorkshire Water, and MWH is considering hosting a 'round table' event to showcase Comnet to a number of companies. 'Once a company figures out how to do things it is very applicable to other companies,' Mr Smith concludes. ●

The contract key to municipal PSP: lessons for improving private sector participation

There is a wealth of advice available on how best to engage the private sector in water and wastewater services provision, covering what to include in a contract and the wider processes by which such contracts are developed and implemented. **KEITH HAYWARD** reviews some of the sources available.

One of the important features of municipal water and wastewater services provision is that those served have no real choice over who their provider is. In essence water is a natural monopoly. But while this may be a constant, delivery of such services always needs to reflect the local context. So while water is a natural monopoly, no-one holds a monopoly view on how the service should be provided.

This point applies generally, but it also applies to the more specific situation where municipalities turn to the private sector for the delivery of services. 'All contracts are different, and all public-private contracts have to be designed to fit perfectly,' comments Gerard Payen, former senior executive vice president of Suez.

Payen does however provide a starting point for considering what constitutes a good private sector contract: 'I think that the contract is good if the goal of the contract is clearly defined and both parties are willing to succeed. This is a good criterion. There is another one: the contract has to be fair. Fair means the rights and obligations of all parties have to be thoroughly thought about. I think that when those two conditions are met, most contracts deliver.'

The question then is how to move from such a general starting point to

specifics aimed at improving the content of private sector contracts and the processes by which they are developed and implemented.

There are any number of initiatives, formal and informal, to do just this. They include the influence international financing institutions such as the World Bank and the Asian Development Bank seek to exert. They include initiatives supported by donor countries such as Switzerland, which launched guidelines earlier this year. They include the private sector itself. And they include input from other influential actors, such as the Water and Sanitation Program and non-governmental organisations such as WaterAid.

This article explores some of the ways that engagement of the private sector can be improved, particularly with respect to the contracts involved. The term 'private sector participation' (PSP) is used in preference to 'privatisation'. The latter term is highly emotive. More importantly, it potentially creates confusion, suggesting an approach as seen in England and Wales in which the ownership of assets is in private hands – an approach that has not found favour around the world. PSP therefore better reflects the reality of how the private sector is being engaged.

This article also focuses on how best to engage the private sector if that is the chosen option. That 'if' – that PSP

is the chosen option – is of course a big 'if'. Just how and by whom that choice is made is important. To a greater or lesser extent, the choice is likely to have been made as the solution to a need for significant service improvements coupled with a need for investment. How that decision was reached can be controversial. In particular, there have been concerns about support from, for example, the World Bank being conditional upon a switch to the private sector. The general principle is that the decision to move to the private sector should be a decision made legitimately in the political arena.

Contract constants

Payen's current roles in the water sector include being a member of UN Secretary General Kofi Annan's advisory board on water and vice-president of the International Water Association's Strategic Council. He is also the first president of AquaFed, an organisation set up to represent the interests of private sector water operators. 'Water management is local and there are many differences. Having said that, managing water supply and sanitation services is a business for which the basics are the same everywhere. So, one goal of our federation is to identify the similarities between the water service providers in all countries.'

As a starting point on this, Payen points to a blueprint document produced by the Water Partnership Council, which operates very much in the developed country context (see box 'Risk allocation in the USA'). 'The blueprint of the Water Partnership Council is really an excellent document,' comments Payen. The council promotes PSPs in the United States, with its members including American Water, Veolia Water, United Water and Severn Trent Services. Part of its blueprint document sets out what the council believes to be some of the key contractual issues to be addressed.

Payen also notes that contracts have improved to some extent over the last decade or so. 'I have the perception that those contract writers that have the experience of previous documents and that have experienced the field impact of what was written in the old contracts are now writing better documents,' he says, adding: 'There is a progress, but not everywhere.'

Payen identifies a number of areas in which there have been improvements. 'Any party can fail or can be in a situation where it is impossible fulfil its own part of the contract and that was not really anticipated in some contracts ten years ago. For example, the fact that the public party [can fail to fulfil] was not so much anticipated, but there are some examples now. So, current

Risk allocation in the USA

The Water Partnership Council, which represents private sector operators in the USA, outlines some of the key contractual issues to be dealt with in its document 'Establishing public-private partnerships for water and wastewater systems – a blueprint for success'.

Contract issues covered in the document include performance criteria for measures such as quality of goods and services provided, safety, customer satisfaction, community relations, compliance, cost control, and adherence to schedule. Suggested questions to consider for establishing when the contract could be terminated include considering whether unsatisfactory performance on a single criterion for a single day could constitute sufficient cause, and considering how issues will be resolved if the private partner challenges a decision to terminate the contract.

One of the key contract issues covered is risk allocation, and the document notes that contract terms and conditions based on a realistic assessment of risks provide added protection for both the public and private partner.

Risks typically assumed by the private partner are:

- the risk that the 'as-is' condition of the plant are adequate for meeting the contract obligations, but with risks resulting from prior latent defects customarily remaining with the public partner
- the risk of operating the plant in accordance with performance criteria and within design capability
- the risk of excessive asset deterioration, especially where preventive maintenance is stipulated
- the risk of exceeding budgeted costs
- the risk of not complying with environmental regulations

Risks typically retained by the private partner are:

- the risk that influent quality and quantity falls outside stipulated values
- the risk of seeking amendments to the contract
- risks arising from uncontrollable circumstances

Risks that are typically shared are:

- those relating to system repairs and replacements
- indemnification

contracts are anticipating such events more than before.'

Similarly, he points out that contracts can be written such that they anticipate a range of eventualities, but that it is nonetheless important to provide for unforeseeable events. 'A good long-term PPP contract should anticipate events which are not foreseeable, whatever they are,' says Payen. 'So you can define in your contract a list of events which you foresee and say what you will do in such cases, but in any case you have to know that some events are not foreseeable.'

This anticipation of future events, foreseeable or unforeseeable, is essentially an issue of how risk is managed under the contract. This is a theme picked up by Mark Lane, head of the water sector group at London-headquartered international law firm Pinsent Masons. In his opinion private sector operators now pay more attention to ensuring the risk profile of a project is right. 'It's a question of really making sure that all the risks are covered – easy to say, but not necessarily so easy to do,' says Lane. 'That requires a pretty deep understanding of the country and the city that you are operating in. There's a certain kind of 'hard core' [of risks] that will go on in any project, but clearly there are some that will be very country or project specific. So it's a question of identifying those and then coming up with suitable wording that is

acceptable to both parties to cover that risk in a way that makes the project bankable.'

Even with such thorough planning, there is still a need to anticipate change. 'The concept of how you manage change in a twenty five year concession contract is a huge issue and always will be,' says Lane, although he also notes there is a tendency towards considering shorter contracts as the initial approach to involving the private sector. In relation to the longer contracts, Lane comments: 'You can be sure there is going to be a lot of change in that period that will affect the conduct of the matters that are the subjects of those bits of paper. How that is all dealt with in the contract is one of the biggest challenges of all – how to make the change clauses robust enough to withstand the tremendous pressures of the changes that will occur.'

Acting on this awareness, however, is less straightforward. 'I think there has been an increase of understanding of the risk of change, but I am not sure the development of how to deal with that has improved really,' says Lane. But he adds that experience of recent years has highlighted the need for international contracts to include, for example, provisions relating to currency fluctuations. 'Certainly all these contracts should have, if they are dealing with different currencies, a currency fluctuations clause and it

needs to be very robust, as we have seen,' he adds.

Lane identifies another area in which problems may be encountered during the life of a contract: plant performance. 'Another area where I think history has shown there is often a major problem is the specification of the technical performance of the plant,' he says. Furthermore, the plant performance aspect of contracts will, he says, always need to be adapted to local circumstances. For example, in the contracts for major private wastewater projects in Scotland payment is based partly on plant availability and partly on influent volume, meaning the payment mechanism is tied closely to the local circumstances. 'That is

why you can only take so far the standardisation of these types of contracts,' he says.

Wider reforms

While there is scope for the content of contracts to be improved and aligned with what might be considered best practice, efforts to improve how PSPs operate have to look at the wider context in which contracts are prepared and implemented. This can be seen clearly in one of the major initiatives in this area, the ongoing Swiss initiative being supported by the Swiss Agency for Development and Cooperation, the Swiss State Secretariat for Economic Affairs (SECO), and Swiss Reinsurance

Company. This initiative is based around two core documents released earlier this year – a 'policy principles' document, intended as a framework for discussion at the political level, and an 'implementation guidelines' document, intended as guidance to run right through from project preparation to contract renewal (see box 'Swiss support for PSPs').

'The basic approach is applicable to all countries,' notes Dieter Rothenberger, SECO's leader on the initiative. The whole initiative is based around ten key factors. The implementation guidelines are split into three parallel processes. At the core is the main contract process of preparation, planning, procurement, operation and monitoring, and renewal. Alongside this, guidance has been developed for the regulatory process and for support processes such as stakeholder cooperation and communication. 'I think that with this kind of separation we made it very clear that these are additional processes which are of high relevance for the success of the whole implementation,' says Rothenberger. Contracts may include details of the part public authorities must play once a contract is in place, perhaps as a first level of regulation. But, says Rothenberger, often the authorities have not been clear on this. 'PPP does not mean you get rid of all of that and everything has to be done by the private operator – there is still a strong role for the public authority,' he says.

Another source of comprehensive guidance on PSP is the World Bank. The bank launched its first toolkit on PSP in 1997, available online as three toolkits covering preparation, the bidding process and contract drafting. This toolkit has just been updated, as Tim Irwin, project manager at the bank for the work, explains: 'The first toolkit gives an excellent account of the issues. It is still useful and will continue to be available after the new toolkit is published. Its main weakness now is that it doesn't reflect experience since the mid-1990s.' The new toolkit targets developing-country governments in the design of arrangements governing private participation and contains brief descriptions of 16 examples of private participation (see box 'Learning lessons from around the world'). 'It also treats certain topics more deeply than the first toolkit, including: affermage contracts; the tradeoffs between tariffs, subsidies and coverage targets; the analysis and allocation of risk; and consultation with stakeholders in the design of arrangements,' says Irwin.

Together these two initiatives provide would-be users of PSP contracts with a considerable body of

Swiss support for PSPs

The Swiss-backed initiative on PSPs (see www.partnershipsforwater.net) is based around ten key factors, which the initiative's 'implementation guidelines' seek to turn into tangible activities.

Poverty responsiveness

Bringing in the private sector does not inherently address poverty issues, meaning explicit measures are needed.

Water resource protection

The need to consider environmental protection, water resource management, and demand-side / supply-side service management.

Power-balanced partnership

The need to identify stakeholders and ensure cooperation between them.

Shared incentives

The need for financial non-financial incentives for contracting parties and stakeholders.

Accountability

The need to ensure policy and financial accountability across the range of responsible parties.

Transparency

A prerequisite for accountability, and key to countering corruption and bribery.

Customer focus

The vital role of the long-term support and acceptance of customers.

Results orientation

The need to define activities where possible using outputs and targets.

Proactive risk management

The central role of risk mitigation in helping achieve a sustainable service.

Sound financing mechanisms

Crucial for long-term operation, maintenance, replacement and extension.

Implementation guidance is provided right through from project planning to contract renewal, with intermediate phases including project design, procurement, and operation and monitoring of the contract. In each case, guidance is given for the main process and for the regulation process and for support processes.

The guidance also suggests who should be involved in each aspect. For example, one aspect of project preparation might be to review the current economic and organisational status, looking at what subsidies there are, the extent of cost recovery, and the financial viability of the operation. The guidelines suggest that local government takes a lead on this aspect, with possible actors being water utilities, financial experts and donors.

The document also includes the recommendation that PSP tenders cover:

- service area and scope of work
- levels of service
- tariffs
- commitment on staffing and salaries, etc.
- level of investment
- maintenance levels

information. Fortunately then that an effort has been made to align the outputs of the two. 'Actually we have also been involved in the development of this World Bank toolkit, in order to make sure we are not having duplication of work,' says Rothenberger. He also feels that the World Bank toolkit focuses more on the political level, directed at governments or their advisors, while the Swiss outputs are intended more for those charged with actual implementation.

Serving the poor – a key area for reform

Probably the highest profile issue about which there are calls for improvements in PSPs is in the way in which contracts meet the needs of the poorest sections of the communities served. This was the subject of, for example, 'New designs for water and sanitation transactions – making private sector participation work for the poor', produced by the Public-Private Infrastructure Advisory Facility (PPIAF) and the Water and Sanitation Program (WSP) (see box 'Meeting the needs of the poor'). Also, the Swiss initiative puts forward, in its 'policy principles' document, poverty responsiveness as one of ten key factors for shaping private sector participation.

Meeting the needs of the poor is no simple matter. A contract that would otherwise not specifically take account of the poor cannot just be adjusted in this respect – the values and approaches involved go right to the heart of how a contract is set up. Indeed, the needs of the poor can only be met if wider supportive water sector reforms are also carried out within a country. The PPIAF / WSP report, for example, sets out 24 guiding principles for legal reform.

At the level of contract design, the PPIAF / WSP report suggests eight guiding principles for the design of pro-poor contracts. The poor have a high interest in expansion of the service network. A guiding principle in this context is that the poor should be made profitable customers, by instituting a good tariff policy and potentially making bonus payments. Providers other than the main network provider also have a role to play, so these should not be excluded. There are also guiding principles in relation to the use of alternatives to conventional services. Here, for example, the operator should work to output rather than input standards, so that the operator is left to make decisions about how the service should be provided.

Consideration of the poor also runs throughout the contract process. For example, the 'implementation guidelines' of the Swiss initiative highlight

the need to identify the poor as part of the preparatory thinking on whether and how to embark on a contract to engage the private sector. Planning and designing a contract will then involve, for example, a decision on the geographical area to be covered.

Procurement of a contract should include creation of explicit poverty incentives for the private operator. And ongoing operation of a contract should include conducting surveys to establish the effectiveness of subsidies in comparison to original expectations.

Contracts under which the private sector can be engaged in water and wastewater services provision can of course take many different forms, including the broad categories of management contracts, affermage arrangements and leases, right through to concession contracts. Each of these broad categories has its own characteristics, including the likelihood that there will be an incentive to address the needs of the poor. The PPIAF / WSP report notes that there will probably be

little incentive for management contracts to be pro-poor. In contrast, there are likely to be strong incentives in concession contracts. Whatever the contract type, the report identifies ways that contracts can be redesigned so as to better take account of the needs of the poor. In the case of management contracts, for example, network expansion can be made one of the performance indicators to which incentive payments for the private operator are linked. In concession contracts, one means of redesigning such contracts is that a tariff structure that gives the operator an incentive to connect more poor households should be used.

Such recommendations indicate that tariffs and subsidies clearly have an important part to play in ensuring contracts meet the needs of the poor, and the PPIAF / WSP report includes general recommendations with respect to these aspects. In particular, the report sets out five principles on tariff setting and subsidy delivery. The first of

Learning lessons from around the world

The World Bank, in its new publication, 'Approaches to private participation in water services – a toolkit', includes a review of 16 examples to provide lessons for PSPs:

Amman, Jordan
Cartegena, Colombia
Chaumont, France
Cochabamba, Bolivia
Cote d'Ivoire
Gabon
Gdansk, Poland
La Paz and El Alto, Bolivia
London and Thames Valley, UK
Metro Manila, Philippines
San Pedro Sula, Honduras
Santiago, Chile
Senegal
Sofia, Bulgaria
Tangiers, Morocco
Trinidad and Tobago

The toolkit argues that the arrangement between the operator and contracting authority should contain mechanisms to promote effective working relationships and for the arrangement to evolve. This is more likely if:

- All stakeholders are consulted and consider the reform legitimate.
- Overall sector policy and structure are clear and sensible.
- Service improvement benefits customers, tariffs cover costs, and subsidies address pressing social concerns.
- Risks are allocated to the party best able to manage them.
- Rules and institutions are developed that allow the terms of the arrangement to change in response to unpredictable circumstances in ways that are flexible but fair.
- The arrangement is embodied in clear and enforceable legal instruments.
- The government has selected a good operator.

While the advice in the toolkit is aimed at governments, it nonetheless has a bearing on how contracts will be put together. For example, it notes that changing circumstances over the life of a contract mean there may be the need for adjustments to the service standards, tariffs and arrangements for remunerating the operator. The toolkit warns that combining a mechanism for making these adjustments through negotiations between the operator and the public authority with a mechanism involving input by an independent regulator can create risks. 'If the independent regulator can effectively override the contract, the operator may be exposed to too much policy risk,' the toolkit notes. It suggests that a better approach if these mechanisms are to be blended is to make sure the independent regulator's decisions are governed by the contract and subject to arbitration and furthermore that contracts and arbitration are public.

these is that getting the tariff level and the tariff structure right helps all consumers, including the poor. The report notes that use of an increasing block tariff may be politically acceptable, but that use of a uniform volumetric charge has considerable merits from the perspective of the poor. The other principles are: subsidise access, not consumption; subsidy delivery mechanisms should be targeted, transparent and triggered by household indication of demand; there will possibly be a need for new information on the impact of proposed tariffs on poor households; and there will be a need for decisions to be made on how to incorporate social equity concerns into the tariff and subsidy modifications that will be needed over time.

The recommendation that access rather than consumption should be subsidised is backed up by the Swiss initiative, that states in its 'policy principles' document: 'Tariff policies with subsidies are often proposed as pro-poor measures. But general tariff subsidies distort demand and usage patterns and very often fail to (exclusively) reach the poor. Subsidies financed from external sources (tax money, ODA) should be decoupled from the water charges and instead used for service expansion (making new connections).'

Conclusions

Where private sector contracts are used in the provision of water and wastewater services, they will always ultimately have to be adapted to local circumstances. In this sense the idea that no-one has a monopoly on the ideas as to how to implement such contracts holds true. Neither can many of the ideas be isolated by the public / private split: a great deal of the thinking in the documents emanating from the Swiss initiative, for example, would hold true as good advice for creating an effective public sector, and Dieter Rothenberger concedes that the documents could have been better presented as such. 'We tried to make this point; maybe we should strengthen this a little bit more. It is of course guidance for PPP, but it can at the same time also be used for public utilities if they have a clear-cut task and a clear-cut body which is separate from the kind of national ministry of water, [that] type of thing.' But this need to always adapt to local circumstances can be seen as a constant and, once this need for diversity is accepted, it would appear that progress is being made in establishing common thinking about how to approach private sector participation in the water sector. ●

Meeting the needs of the poor

One of the biggest challenges for PSP contracts is how to ensure the needs of the poor are met. The Water and Sanitation Program / PPIAF report 'New designs for water and sanitation transactions' provides eight guiding principles:

- Network expansion can be encouraged by all contract types, though high-autonomy ones such as concessions have an advantage in attracting large-scale private investment.
- Coverage targets can be designed to target the poor, but their efficacy in doing so is limited by the overall extent of expansion and the ability to identify and delineate poor areas.
- Making poor households profitable customers through good tariff policy and specific bonus payments will negate the need for coverage targets and result in the operator finding ways to attract them, such as providing credit.
- Exclusivity provisions that create barriers to alternative providers whose services are oriented toward the poor should be avoided. If some type of exclusivity is necessary, it should be restricted to network services.
- Coverage should be defined in a way that encourages operators to collaborate with alternative providers where they are able to provide similar services at lower cost.
- Standards are often an effective mechanism for bringing about improved service quality, but if badly designed can hinder network and off-network provision in poor areas.
- Input standards are warranted under certain contractual forms, but they stifle innovation; where possible, use output standards and leave to the operator decisions about means, materials and methods.
- While making standards as flexible as possible, it may be advisable to respect certain minimum standards regarding water quality, quantity, and, in piped systems, pressure and continuity.

The report also sets out five principles of tariff setting and subsidy delivery:

- Getting the tariff level and the tariff structure right helps all consumers, including the poor.
- Subsidise access, not consumption.
- Subsidy delivery mechanisms should be targeted, transparent and triggered by household indication of demand.
- New information is often required to evaluate whether a proposed tariff or subsidy will hurt or help poor households.
- Because tariffs and subsidies require modifications over time, decisions must be made about how social equity concerns will be incorporated in the tariff and subsidy revision process.

Further information

Policy principles – framework for sustainable partnerships
Swiss Agency for Development and Cooperation, Swiss State Secretariat for Economic Affairs, and Swiss Reinsurance Company, 2005
Available at: www.partnershipsforwater.net

Implementation guidelines – manual for sustainable municipal water services
Swiss Agency for Development and Cooperation, Swiss State Secretariat for Economic Affairs, and Swiss Reinsurance Company, 2005
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New designs for water and sanitation transactions – making private sector participation work for the poor. Clarissa Brocklehurst (Ed). Public-Private Infrastructure Advisory Facility (PPIAF) and the Water and Sanitation Program, May 2002.
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Establishing public-private partnerships for water and wastewater systems: a blueprint for success
Water Partnership Council, 2003
Available at: www.waterpartnership.org/handbook.htm

Toolkits for private participation in water and sanitation
World Bank, 1997
Available at: <http://rru.worldbank.org/Toolkits/WaterSanitation/>

Approaches to private participation in water services – a toolkit
World Bank, in press

Homepage of AquaFed, the international federation of private water operators
Visit: www.aquafed.org

Homepage of international law firm Pinsent Masons
Visit: www.pinsentmasons.com

Scottish Water's public performance



As chairman of Scottish Water, **PROFESSOR ALAN ALEXANDER** has been a driving force in creating a public sector organisation able to meet private sector disciplines. **PAUL GARRETT** spoke with him.

People often use the term 'the UK water industry', but in fact there is no such thing. The water industry in the United Kingdom is actually structured along four distinct models. England has ten private sector water and sewerage companies, and 13 water supply companies; Wales has one not-for-profit company limited by guarantee; Northern Ireland has the government-owned Water Service; and Scotland has a public corporation in the form of Scottish Water. Its chairman is Professor Alan Alexander.

Scottish Water was the result of a three into one consolidation of the

country's three water authorities in April 2002. These authorities had themselves been formed from a larger number of regional local authority organisations, so the Scottish Water story is about an industry born out of a process of consolidation. It is also a story, thanks to a history of being starved of investment in the public sector (while the privatised companies in England and Wales stormed ahead with huge investment programmes), of an industry having to play catch-up with the rest of Britain – and Europe.

Alexander, and his chief executive Jon Hargreaves, established from day one that if Scottish Water was to be a public corporation water in Scotland is

such a political issue it could never be cajoled into the private sector – then it could still be run as if it were more like its private sector brethren south of the border. And he cites the way the board was established as a marker for the way ahead.

'From the outset, the Scottish Ministers set out specifications for Scottish Water's non-executive directors,' he says. 'We got people from Shell, Hoover, Scottish & Southern Energy, Citibank, Herriot Watt University – people with the right mix of competencies – and were able to pay them something approaching the going rate too. We were also able to recruit executives at above the usual public sector levels of compensation.'

So not only was the fledgling water corporation going to be regulated like the privatised English and Welsh industry, it would also be able to compete with them for the best talent. And that talent would be needed for the task ahead.

'When we came into existence in April 2002, Jon Hargreaves and I realised that we had a huge challenge facing us,' says Alexander. 'We inherited a £2.3 billion capital expenditure programme from the three water authorities, which the regulator wanted trimmed back to £1.8 billion while delivering exactly the same outputs, and an organisation with three different cultures – plus compliance levels with European Directives which lagged way behind those in England and Wales. We had to move fast.'

Alexander knew that he and his team had to change the local government culture that pervaded the organisation. 'So we set up the Scottish Water Council to represent the workforce, both unionised and non-unionised, realising from the outset that the workforce had to be trusted and involved throughout the process of change that had to come.'

Alexander needed regulatory and ministerial support for the voluntary staff reduction programme that had to be applied to the overmanned corporation – and got it.

Indeed, without the recently created devolved Scottish Parliament, he

believes the whole Scottish Water project would not have been possible. 'Westminster would not have found the parliamentary time to go to the trouble of establishing a single Scottish water company,' he says.

'I wanted to ensure that the voluntary severance programme was as generous as possible,' he says. 'We made job cuts across the board - we went from 80 senior managers to 35, for example - and reduced the workforce from 6200 to 3200 people in the core business. We also rationalised the workforce's terms and conditions - when Scottish Water was formed we inherited 72 pay scales and 900 different job titles.'

The whole rationale of creating Scottish Water out of three water authorities was to achieve greater efficiencies and economies of scale. One early example of this was call centres. Scottish Water inherited three - in Dundee, Glasgow and Edinburgh. What the organisation needed was one.

'We asked the staff council what they thought. They recommended we retained Edinburgh, so Edinburgh it was,' he says.

The three into one process also meant that surplus property could be sold off. 'We are in the process of property sales that will yield up to £20 million,' says Alexander. 'We began with two and a half times more office and depot space per employee than other benchmarked companies. One unwanted and unloved office in Stirling alone has fetched over £2 million.'

All this has helped Scottish Water towards their target of reducing operational expenditure from £400 million a year to £265 million. But reducing capital expenditure looked like being more difficult. Alexander and Hargreaves, answer was to set up

Scottish Water Solutions. This manages two consortia, one led by Thames Water, the other by United Utilities. These in turn manage £1.2 billion of the capital investment programme.

Alexander says the corporation's annual investment spend is running at around £550 million a year. 'Are we playing catch up with the rest of Britain? Yes, hugely,' he says. 'In the days before Scottish Water was created the annual investment in water in Scotland never rose above £250 million a year when the regional councils were in charge, and about £400 million under the three water authorities - and was frequently much less than that. There is a huge, huge backlog.'

'We are replacing pipes at a rate that is not matched by any other water company in the world.'

Alan Alexander

But he warns: 'We cannot do in four years what the English companies did in 15. We will have to go on spending at the level we are now until 2014.' Regulator permitting, that is.

What is the expenditure going on? 'We have a big cast iron pipe problem,' says Alexander. 'We also have asbestos cement pipes from the 1960s which must be replaced. We are replacing pipes at a rate that is not matched by any other water company in the world - 31 km a week.' With 45,000 km of water pipes and 36,000 km of sewers the task is a long one, but at least Scotland's infamous legacy of lead water pipes is a problem that is now well on the way to being solved. Wastewater treatment investment is another priority with stringent European standards to be met. Another issue is the number of small water and wastewater works. 'We have 80 per cent of the population living in 20 per cent of the land mass. That means that we have a large part of Scotland that is remote and thinly populated. As a result we have 900 small, often remote works - more than the rest of Britain put together.'

And while striving to create a Scottish Water culture, Alexander recognises the stark difference between a water operation serving urban Glasgow and the remote Highlands must be acknowledged. 'We recognise diversity,' he says, 'but at the same time must make sure that cultural differences are not used as an excuse for inefficiency.' He also adds that the regulatory process must recognise geographic differences.

That regulatory process will soon be setting out price controls and investment for the next four-year

regulatory period. Alexander and his team are aware that they need to make contingencies for regulatory investment shortfall. 'If the regulatory settlement was to be unsatisfactory we would appeal but there are options such as outsourcing operations and customer service in the way that Glas Cymru has done, successfully, in Wales,' he says.

'Of course, our "owners", the Scottish Executive, might have something to say about that if job losses were involved.'

In terms of regulation, the reorganised Water Industry Commission for Scotland is now very similar in scope and remit to its equivalent in England and Wales, Ofwat. But if it is playing catch-up in terms of investment and regulatory structure, the water industry in Scotland, while denied the chance to be a true private sector player, may be ahead of the rest of the United Kingdom in two other ways - consolidation and competition.

There is one water entity for Scotland, one for Northern Ireland and one for Wales, as we have seen - but 15 in England. When the three water authority chairmen first got together to discuss closer co-operation and concluded one Scottish water body was the best way forward, Alexander thinks they hit on a model, in terms of its scale, which could be emulated south of the border. 'I think Ofwat has been wrong in obstructing consolidation in England,' he says. 'Mergers such as bringing together South West, Bristol and Wessex, for example, which are geographically adjacent, would bring obvious efficiencies.'

In terms of the introduction of competition, Alexander borrows a catchphrase from UK TV comedy series *Blackadder* and describes the introduction of competition for business customers in Scotland from 1 April 2008 as 'the Scottish Parliament's "Baldrick solution" - it's their cunning plan!'

This will involve the separation of Scottish Water's business into retail for the competitive business market and wholesale, which will also include the non-competitive domestic retail business.

Alexander acknowledges that this could mean Scottish Water losing some market share in the 133,000-customer business customer sector. These customers will also need to be metered by 2010 at the latest. 'The margins in business retail are small, says Alexander. 'A competitive market will only take off if we can add value.'

'But we will be ready for it - and will be a vastly more efficient organisation than the one that set out in 2002.' ●

Biography

Professor Alan Alexander, Chair of Scottish Water (since April 2002), and Chairman of West of Scotland Water (1999-2002), retired from the Chair of Local and Public Management at the Strathclyde Business School, University of Strathclyde in July 2000. He is now Emeritus Professor.

Publications include a number of books on local government and many articles in academic journals. He has been a leading member of two local authorities and in 1992 he was the sole academic member of The Scottish Office Working Party on the Internal Management of Local Authorities.

In 1998-1999 he was a member of the Commission on Local Government and the Scottish Parliament (The McIntosh Commission). He has been a member of the Accounts Commission for Scotland since October 2002 and a member of the Economic and Social Research Council since 2003.

In 2003, Professor Alexander was elected a Fellow of the Royal Society of Edinburgh. He is President of the Institution of Water Officers, 2005-2006.