European Water Management between Regulation and Competition: The case of Ireland

Authors

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1 INTRODUCTION

Ireland' s water sector has seen many improvements in recent years due to the growing interest on water conservation and pollution control which has been accompanied by an influx of funds both by the European Union and the Irish Government. The institutional, organizational and administrative structures are gradually changing leaving room for an increased involvement of the private sector. The polluter pays principle is steadily adopted in most respects while at the same time the abolition of domestic water use charges verifies that water can be both a public and an economic good.

In general the organization of Ireland's water sector is governed by the following laws and principles:

- Local Government (Sanitary Services) Act, 1948, amended in 1962 and in 1964
- Private Water Supplies and Sewerage Facilities Regulations, 1963, amended in 1978
- Local Government (Water Pollution) Act, 1977, amended in 1990
- European Communities (Quality of Salmonid Waters) Regulations, 1988
- European Communities (Quality of Water Intended for Human Consumption) Regulations, 1988
- European Communities (Quality of Surface Water Intended for the Abstraction of Drinking Water) Regulations, 1989
- Local Government (Financial Provisions) Act 1983, amended in 1997
- Local Government (Dublin) Act, 1993
- Environment Protection Agency Act, 1992
- Local Government (Water Pollution) (Nutrient Management Planning Consultation) Regulations, 1998

The Department of Environment & Local Government (DELG) is responsible for policy and legislation in relation to water quality issues and, together with local authorities, for the implementation of the EU Directives.

Statutory responsibility for water management and protection rests primarily with local authorities which under the Water Pollution Acts, 1977 and 1990 have the power to prevent pollution.

The most recent national overview of water quality in Ireland is provided in the Environmental Protection Agency (EPA) Report entitled "Water Quality in Ireland 1991-1994". It reports on rivers, lakes, estuarine and coastal waters. The catchment-based strategy - Managing Ireland's Rivers and Lakes – incorporates a range of measures to protect and, where necessary to restore water quality. Local authorities have the primary responsibility for ensuring adoption of the catchment based approach to the development and implementation of their pollution control strategies, concentrating in 6 catchments – Loughs Derg, Ree and Leane and the rivers Liffey, Suir and Boyne at a total cost of over £6m (approx. EUR 7.62m).

A major programme of capital expenditure in sewage infrastructure is being placed on catchment areas of waters, which have been designated as sensitive under the Urban Waste Directive (91/271) EEC.

The Department has also a major role in the provision and development of the country's physical infrastructure, key elements of which are water supply and waste water services. In recent years the Department has been running a major programme of investment with the assistance of EU aid. The largest source of capital funding comes from the EU Cohesion Fund, but also from the European Regional Development Fund, the Interreg II Initiative, and by the Exchequer. The provision of water and wastewater services is the responsibility of Ireland's 88 local authorities (county and city councils and boroughs).

Private sector involvement in the water market is legally allowed under the Private Water Supplies and Sewerage Facilities Regulations 1963, amended in 1978. These regulations were introduced by the Minister for Local Government. Nowadays, the Minister for the Environment and Local Government, with the consent of the Minister of Finance, is responsible for these.

2 CURRENT SITUATION IN THE WATER MARKET

The Department of the Environment & Local Government oversees the operation of the local government system and implements policy in relation to local government structures, functions, human resources and financing. Local government in Ireland consists of a number of local and regional authorities at three levels: the county/city level, the sub-county level and the regional level. Thirty-four local authorities at the county/city level (29 county councils and five cities) are the mainline providers of local government services. Water supply and wastewater collection services are the responsibility of the Sanitary Authorities, which are a section of the Local Authorities Organization. In some urban areas these are part of the Urban District Council or the County Borough Corporation organisation rather than the county council. Today there are 45 Sanitary Authorities in the Republic of Ireland with certain counties having more than one. Water is also supplied by private or semi-private Group Water Schemes that supply two or more dwellings, while in very remote rural areas water is drawn from wells. The Department is responsible for policy and legislation in relation to water management and quality issues while the statutory responsibility for water supply, quality control and sewerage as well as the implementation of the EU Directives rests primarily with local authorities.

2.1 Control and legislation

Traditionally water supply and sewerage have been governed by the Local Government Acts including those on Public Health and Sanitary Services (1878-1964), Water Pollution (1977 and 1990) and Financial Provisions (1983, 1997), and since 1992 by the Environmental Protection Agency Act on urban waste water treatment. The quality of water has been long regulated by a number of Acts on Public Health while more recently in 1988 the European Community set out the Quality of Salmonid Waters Regulations and in 1989 the Quality of Surface Water Intended for the Abstraction of Drinking Regulations.

Under the Sanitary Acts, the Sanitary Authorities are responsible for the provision of water supplies, ensuring adequacy of supply and maintaining water quality for human consumption. However the legislation is not specific in the actions to be undertaken in each case and consequently the adequacy and quality of supplies is not consistent across the country. The Sanitary Authorities operate a number of water supply schemes and the water distribution input in these comprises of groundwater and surface water sources, which are available within the boundaries of the administrative unit (usually the county council).

Nevertheless not all households are connected to the local authority water supply service. In 1962 the Local Government (Sanitary Services) Act gave the Minister the power to set up regulations - The Private Water Supplies and Sewerage Facilities Regulations 1963, amended in 1978 - for the provision and installation of private water supplies and sewerage facilities in more than one dwelling-house, using a common disposal system. Dwellers could form a “group” that was to function as a private operator. Under the regulations, a group could apply for a grant to the Ministry or the Sanitary Authority that could not exceed two-thirds of the amount estimated by the Minister to be the cost of the work. These regulations were introduced by the Ministry of Local Government overseen at that time by the Ministry of Environment and with the consent of the Minister of Finance. There are currently two types of Group Water Schemes in Ireland. Semi-private Group Water Schemes obtain their water from the public water supply systems, usually through a purchase agreement. Private group water schemes have their own sources of water. In 1997 almost 200,000 primarily rural households, out of the one million households in Ireland, were not connected to a public water supply scheme. Many of these are still served by the Group Water Schemes.

Although initially domestic users were charged with a fee for water supply, the Local Government (Financial Provisions) Act, 1997, abolished the power of Local Authorities to levy charges for the provision of domestic water supplies and sewage disposal facilities. Local Authorities are only entitled to levy charges for water supplied for non-domestic purposes such as agriculture, commercial and industrial use. Large consumers are billed on a metered charge basis while fixed amount charges are levied on others. The Local Authorities are responsible for setting the rates and they can change them at any time.

Under the Water Pollution Act, amended in 1990, the local authorities gained the power to prevent pollution in rivers and lakes. It gave the local authorities the power to prosecute for water pollution offences, issue notices to farmers and industrial water users, seek court orders to prevent, terminate, mitigate or remedy pollution and its

effects, prepare water quality management plans and make bye-laws regulating certain agricultural activities to prevent or eliminate pollution of waters.

In 1992 the Environmental Protection Agency was founded in order to make further and better provision for the environment and the control of pollution and to increase certain existing monetary penalties for non-compliance with the environmental rules. In the Act, it is explicitly stated that the Agency may at any time require a Sanitary Authority to submit to it any information needed for the monitoring of the quality of water intended for human consumption, in accordance with the European Communities (Quality of Water intended for Human Consumption) Regulations, 1988. In addition the Act gave the authority to the Minister of Environment and Local Government to make regulations for the collection, treatment, discharge or disposal of sewage or other effluents to waters, for the purposes of environmental protection and, in particular, for the purpose of giving full effect to the Council Directive 91/271/EEC. Nevertheless, the Environmental Protection Agency was set responsible for water pollution only insofar as activities licensable by the Agency were involved, such as complex industrial activities, as well as large intensive pig and poultry production units - operations having a potential to cause significant pollution. The Agency has also been granted with the authority to issue a licence which involves a discharge of any trade effluent or other matter (other than domestic sewage or storm water) to a sewer, with the consent of the relevant Sanitary Authority. In considering an application for a licence, the Agency considers either or both the water quality management plan and/or thewaste management plan and any emission from the licensed activity must comply with all relevant quality standards for waters, trade and sewage effluents as well as with the standards for their treatment, as prescribed under the Local Government (Water Pollution) Act, 1977.

On the other hand, water quality monitoring in the form of sample provision and analysis is carried out either by the Sanitary Authorities or by the Regional Health Board on behalf of the Sanitary Authority to demonstrate compliance with the drinking water quality regulations or to demonstrate that a previous quality problem has been overcome. Results of sample analyses are reported to the EPA. There is little routine monitoring of water quality for operational reasons.

2.2 Contracts and transparency

In January 1999, the Department of the Environment and Local Government (DELG) established a Unit to promote and facilitate the development of Public Private Partnership (PPP) in the sectors for which the Department has responsibility. A PPP is a partnership between the public and private sector for the purpose of delivering a project or service traditionally provided by the public sector, recognising that both the public and the private sector have certain advantages relative to eachother in the performance of specific tasks. Later that year, the Government announced the commencement of a pilot PPP programme, which also included a series of pilot projects in the water services and wastewater management sectors.

In the water services sector, PPP is being advanced in the field of wastewater treatment, grouped catchment wastewater facilities, expansion of water treatment works in major cities, rural group water (improvements in supply) schemes, operation of major treatment works (service contracts) and developer led, serviced land initiative projects. Significant progress has already been made in some forms of PPP in water services, particularly in the areas of Design/Build, and Design/Build and Operate contracts. The Design and Build (DB) contracts refer to a contractual relationship between the Public Sector Client and a Private Sector Contractor for the Design and Construction of the facility, which is then handed over to the Public Sector to operate. Under this arrangement, the Contractor is responsible for both the design and construction of the facility to satisfy prescribed criteria laid down in the Contract Document. The Design, Build and Operate (DBO) contract refers to a contractual relationship between the Public Sector Client and a Private Sector Contractor for the Design, Construction and Operation of the Treatment Plant. Under such a contract, the construction of the plant is financed by the Public Sector but responsibility for the operation of the plant for a defined period of time rests with the Contractor. Ownership of the plant always remains with the Public Sector.

In the current Investment Programme under the National Development Plan (NDP) an estimated EUR 3.68 billion has been tailored for investment in the provision of water and wastewater infrastructure over the period 2000-2006, to address the infrastructural deficit. For the years 2000-2002 the first phase of the NDP 2000-2006 provided £2.1bn (approx. EUR 2.67bn) for the

construction of 529 schemes in total, including 79 ongoing and 113 new construction schemes, 131 schemes to be planned and 206 schemes under Serviced Land and Rural Towns and Villages Initiatives. These schemes refer to wastewater treatment, water supply, rehabilitation and management of water and wastewater infrastructure, water and wastewater schemes to provide for infrastructural support for economic activity and the rural water programme. The aim was to achieve the EU and national water quality and waste water standards, remedy existing and prevent future water pollution, and preserve and protect water resources from point source pollution, while meeting national infrastructural needs. The Plan envisaged an almost threefold increase in capital spending on water services in the seven years up to 2006 by comparison to the 1994-1999 period. A minimum of £100m (approx. EUR 127m) of private finance was also to be invested in the water services sector over the NDP plan. On the other hand the European Union was to contribute £251m (approx. EUR 318.7m) through the Cohesion and European Regional Development Funds towards water services infrastructure up to 2003.

Major parts of the water services investment programme have been carried out using the PPP approach. Towards this end, the NDP as it has been already indicated, provides for investment of EUR 127million of private finance. An assessment of individual projects is carried out by local authorities and the DELG to determine that the PPP approach is appropriate and, if so, what particular model should be used.

With regard to Group Water Schemes, new approaches are being developed with regard to the treating and disinfection of small-scale supplies and subsequent operation and management of these treatment plants. These contracts might involve cooperation between more than one group water schemes (in some cases up to 20 groups have cooperated), local authorities and the private provider. Their duration is from 10 to 20 years depending whether they involve Design and Build or just Operation. The prices that the private providers charge for the provision of fresh water compare very favourably with those being charged by the Local Authorities for the water supply to rural group water schemes. Indicative prices are: local authority metered charge EUR 3.12 per 1,000 gallons (Claire County) while the price charged by the private providers is approx. EUR 0.91 to approx. EUR 4.76 for 1,000 gallons.

Over 180 schemes have been completed under the first three-year programme. The increase in water production capacity in 2000 and 2001 alone was sufficient to meet the requirements of a population of 378,000 people, while the increase in wastewater treatment capacity during the same period was sufficient to meet the needs of 448,000 people.

For the years 2002 to 2004, the DELG approved new schemes worth EUR 726m to be advanced under the EUR 3.7bn package for water services in the National Development Plan to which the EU is contributing EUR 318m. The new programme contains 605 individual water and sewerage schemes.

In 2002 £35m (approx. EUR 44.44m) were allocated for the upgrading of rural water supply systems. The capital grants and subsidies for private group water schemes have been radically revamped in order to halt the decline in the quality of water supplied by rural group water schemes. The new regulations require group schemes to meet all the health related water quality parameters by 2003. A new national water quality monitoring programme, which will see all private water supply sources tested continuously over a 12 month period, has been scheduled to also commence during the year. The test results will be used to match recent technological advances in the area of water treatment and disinfection to individual schemes, with new grants and subsidies available to groups to pay for water treatment and disinfection equipment.

The overall effort to improve and maintain drinking water quality is further supported by the "polluter pays" principle, which obliges all polluters to get licenses for discharges by the Environmental Protection Agency.

2.2.1 Information

The principal source of information on the environment in Ireland is the Environment Information Service of the Department (ENFO). The Environmental Bulletin, published on a quarterly basis, contains information on issues of current and future interest. Other sources of environmental information include the Environmental Protection Agency, which publishes reports on the State of the Environment (Look at the EPA Report on *Water Quality in Ireland 1998-2000* Directive) and the National Standards Authority of Ireland. The Environmental Protection Agency also publishes reports on Integrated Pollution Control (IPC),

Licensing and Control. The IPC Annual Report 2000 was published in December 2001. In addition the EPA has recently published its report on *Urban WasteWater Discharges in Ireland, 1998 and 1999*. The EPA has also reported on standards achieved in urban wastewater treatment, the number of samples taken and the level of compliance with EU Directives and National Regulations.

The Freedom of Information (FOI) Act which has now come into effect, establishes a number of important new legal rights for those seeking access to official information. In future everyone will have the right:

- to access official records created after 21 April 1998 which are held by Government Departments or other public bodies listed in the Act;
- to have personal details on official records corrected or updated where such information is incomplete, incorrect or misleading; and
- to be given reasons for decisions taken by public bodies that affect them.

2.3 Charges

The Department of Environment and Local Government provides a mechanism for distributing EU and exchequer funds for the provision of water and wastewater services from the local authorities. The capital costs of water and wastewater projects are almost 100% funded via the DELG with the 2/3 of these comprising of EU funds from the Cohesion and Structural Funds.

The operational costs of water and wastewater services are met by the Local Authorities through the water services element of the commercial rate, charges to non-domestic users for water supply and sewage disposal and other revenues raised by the local authorities as well as from the Local Government (Equalisation) Fund distributed by the DELG.

As it has already been mentioned, the Local Government (Financial Provisions) Act, 1997, abolished the power of Local Authorities to levy charges for the provision of domestic water supplies and sewage disposal facilities. As a result domestic use of water is subsidized at 100% by the Government. Local Authorities levy charges for water supplied for non-domestic purposes such as agricultural, commercial and industrial use. Large consumers are billed on a metered charge basis while fixed amount charges are levied on others. Small consumers are therefore also partly subsidized. Indeed the Minister has been fighting strongly, and with some success, on behalf of the Irish domestic water consumers to ensure that domestic water charges will not be reintroduced in the context of the proposed EU Water Framework Directive (2000).

According to the Local Government (Financial Provisions) Act the local authorities have the power to determine and set the rates for local services provision. Water and sewage charges/fees are therefore set for non-dwellers according to this Act. Charges are set according to the productive activity. For small water consumers there are fixed charges for each tap with a ceiling for overall charge. In the case of large consumers, charges are set according to consumption with minimum metered and mixed charge. Large consumers are also determined on the basis of the productive activity undertaken. Connection fees are the same for all consumers that pay charges (industrial, tourist premises, commercial and agricultural premises). Connection fees are also charged to housing schemes (5 or more houses) and large developments. Where unauthorized water and sewerage connections are made to the council's water or wastewater system, such connections are removed and a charge for connection of double the amount of the standard connection fee applies.

As for the group water schemes, when these are semi-private, they obtain their water from the public water supply system usually through a purchase agreement and they usually pay on a metered basis via a meter at the point of connection. Currently several PPP projects are in place for the provision of treatment facilities for water supplied to the group water schemes and public water schemes. The charges set by the private provider are comparable to those of the local authorities.

The charges to non-domestic users that are collected by the Local Authorities are used for financing the operation and maintenance expenses of the water supply schemes.

The Local Government (Water Pollution) Act, 1977 and the Environmental Protection Agency Act, 1992 have set out the provisions for the granting of licenses to polluters for discharges. Under the Government's polluter pays policy framework, non-domestic users of water and

sewage services must not only meet the costs for the provision of such services but also the environmental cost. This policy is intended to promote responsible use of natural resources and higher environmental standards by attaching a monetary value to such services and their environmental impact. If polluters do not conform to the regulations set by the EPA Act, fines and penalties are anticipated.

2.4 Consumption

Ireland is well-endowed with water resources and has one of the highest rates of water availability in Europe. In the EU only the Scandinavian countries have greater natural provision in terms of total renewable freshwater resources per capita. However, regional variations in rainfall and population distribution lead to much less favourable conditions in the east of the country, compared to other areas.

The mean annual rainfall (1961-1990) over the island was estimated at 1150mm. Rainfall is unevenly distributed with the western half of the country having much higher amounts than the eastern half. Estimated losses due to evapotranspiration are about 450mm, giving an effective rainfall of about 700mm. On the other hand, groundwater is a major natural resource in Ireland providing up to 25% of drinking water supplies. In certain counties, the proportion is much higher reaching a 52% in Kilkenny and even 90% in North Cork. Many industries, especially food processing industries such as creameries and meat factories, have their own water supply, often from groundwater. In a study commissioned by the European Communities (1982), it was estimated that only a small fraction (perhaps as little as 3%) of the country's substantial groundwater resources were being used. However, groundwater schemes are now being developed in north Kildare and Laois to meet the demands of these counties. Furthermore, it is anticipated that a significant rise in groundwater use will occur in the next 5 years as short-term needs will be met by this readily available and renewable resource.

Overall there is insufficient quantitative and qualitative information on the amount of water that is available from the different sources, demand by sector, the amount of domestic and non-domestic connections and other relevant data.

The National Water Study that was carried out by the WS Atkins Ireland Company for the DELG in 2000 compiled available data and gathered additional data through questionnaires. It was found that the Unaccounted for Water percentage, i.e. the distribution input that was not accounted for by legitimate use as a result of leakage and illegitimate connections was in general in the range of 40-50%. This means that there is a great loss of water resources and water conservation schemes are urgently needed. The report presents data on Per Capita Consumption for each of the then 26 county councils and only for the year 1997 excluding the Greater Dublin Area, which was the subject of another report. Per Capita Consumption measured as litres per head per day in 1997 for the whole country ranged from 129.8 to 139.4, while Average Domestic Demand measured in megalitres per day ranged from 3.4 in the rural areas to 67.8 in the Dublin County Borough, summing to a total of 488.7 megalitres per day.

Data on nation-wide water consumption by sector is presented below:

Table 1 Water Consumption in Ireland (1996)

	Total Mlt/day	Surface Water Mlt/day	Groundwater Mlt/day
Public Water Supplies*	1,381,000	1,184,000	197,000
Rural Domestic	32,000	-	32,000
Industry (Private Supplies)	179,000	79,000	100,000
Agriculture (Private Supplies)	249,000	-	-
Thermal Power (Fresh Water)	774,000	774,000	-
Total Water Usage (1996)	2,615,000	2,037,000	329,000

Source: Thesis by Michael McCarthaigh, EPA, 1996

**Includes some agricultural and industrial use*

Overall the National Survey by estimating 2001 demand and treatment capacity in Ml/day showed that over 85% of the Sanitary Authorities did not have a current deficit and were meeting the current demand. The Greater Dublin however seemed to be under some pressure in this regard.

Despite the wide availability of water resources, there is a great loss of these, due mainly to leakage. The DELG has recently financed approximately 14 water conservation studies aimed at reducing leakage. Certain other water conservation studies have been already undertaken in Dublin, Limerick, Cork and Waterford. The results from these programmes have been very encouraging for undertaking more of these projects. However these are mostly confined to industrial, commercial and agricultural water uses that are paid for and are usually metered. Telemetry and other systems as

well as the installation of meters at the inlets and the outlets of the reservoirs, installation of control valves, staff training but also capital investment for the repairs of the distribution systems are some of the measures that are undertaken under these schemes for water conservation. For non-domestic use, the improved metering system can enforce the conservation role of the existing financial incentives. However, in the case of domestic water consumption, there are no financial incentives for conservation.

2.5 The role of operators

There are a number of reports as to the number of the public water supply schemes and the group water schemes. The National Water Study undertaken in 2000, reports on the number of the public water supply schemes, excluding the Greater Dublin Area which has been the subject of the Greater Dublin Water Supply Strategic Study, 1996 and some counties that did not qualify for the survey. Overall it is estimated that there are 1,021 public water supply schemes (excluding Greater Dublin) serving a total of 2,077,495 people. Two Sanitary Authorities, the Dublin Corporation and Fingal Co. Council are responsible for the production and supply of water to the Greater Dublin Region. Production of water for supply occurs at four main treatment works with a current reliable production capacity of 475million lt/day, serving domestic consumption of a total of 1.2million people and industrial/ commercial water-loading equivalent to 750,000 people.

The National Federation of Group Water Schemes (NFGWS) has reported the existence of 5,622 Group Water Schemes serving a total of 454,891people in 1998.

3 DEBATE ON PRIVATE SECTOR PARTICIPATION IN THE WATER MARKET

3.1 Protagonists and institutions involved

The main protagonists and institutions involved in the debate of private sector participation in the water market are the following:

- The Government, CIB, NIVCA, EPA
  - The Government - The Department of Environment and Local Government
  - Local and Regional Authorities
  - CIB – Confederation of British Industry Northern Ireland
  - NIVCA – Northern Ireland Council for Voluntary Action
  - EPA – The Environmental Protection Agency
- Other Stakeholders
  - Consultants
  - Engineers
  - Contractors
  - Public servants
  - Consumers

3.1.1 Responses by The Government, CIB, NIVCA, EPA

In recent years Irish Government policy has strongly favoured procuring water and wastewater facilities using a Public Private Partnership (PPP) approach instead of relying almost exclusively on the public sector. PPP arrangements are expected to play an increasingly important role in the delivery of the Water Services Investment Programme.

It should be clearly understood that what is described, as Public Private Partnership is in some way different from privatisation of water services. Under the approach being followed by the Irish authorities the infrastructure being provided by the private sector remains in the ownership of the public sector.

Design/Built/Operate contracts involve drawing up contract arrangements between public sector bodies and private sector contractors for the design, construction and operation of public facilities or infrastructure. Under these arrangements the private sector contractor will:

- design and build the facility to meet public sector performance requirements (output specifications) over the lifetime of the project;
- and is also made responsible for maintaining the facility and replacing the assets whose life has expired during the term of the contract.

At the expiry of the contract the asset reverts back to public sector ownership. The construction of the facility is financed by the public sector and it remains in public ownership throughout the term of the contract. The operational contract will typically be for a 20-year term and at the end of the contract period it is open to the public sector either to take on responsibility for operation and maintenance or to seek to get the same company or another company to undertake this task

The main arguments in support of this policy as seen by the Irish authorities are as follows:

- Public Private Partnership recognises that both the public and the private sector have certain advantages relative to each other in the performance of specific tasks. By allowing each sector to do what it does best, essential facilities (such as water and wastewater treatment plants) can be provided in the most economically efficient manner. Moreover, by promoting the concept of operational contracts under the Design/Build/Operate approach, private sector expertise can also be utilised.
- PPP offer the opportunity of procuring public services and infrastructure by combining the best of the public and private sectors with an emphasis on value for money and delivering quality public services.

Under the National Development Plan (NDP) 2000–2006, investment in water supply includes provision of 127m Euro of private finance. The NDP recognizes that major part of the Investment Program will be carried out using the PPP approach, but without private finance. The program for the provision of wastewater treatment facilities includes schemes required for compliance with the EU Urban Wastewater Treatment Directive and is being carried out in the main by using Design/Build/Operate contracts.

The Irish Government has endorsed the Design/Build/Operate approach as a way of meeting the major demands for increased investment in social, economic and environmental infrastructure in the years ahead. It is to operate alongside the more traditional methods of funding and procuring of large capital projects.

In promoting individual projects as suitable candidates for the Design/Build/Operate approach, the Irish Government has highlighted the following perceived benefits that it hopes will accrue when compared with traditional design:

- designs that can be build more easily
- innovative solutions to design issues
- faster implementation of projects
- better value for money, in particular over the life cycle of the works
- better risk allocation
- greater certainty in construction and operational cost estimation
- improved guarantee of enhanced operational performance.

A specialist unit has been set up in the Department to assist local authorities in assessing the benefits of the public-private partnership model, including the use of Design/Build/Operate contracts, and in the implementation of projects.

3.1.2 Responses by Other Stakeholders

The main challenge with respect to water issues in Ireland is the availability and quality of water. Other important challenges refer to the quality of service, the price of the service and the management and regulation in the framework of the water sector.

Network management and supply of water to customers is a public service and is not as of now carried out by private companies. A distinction has been identified between the treatment of water/waste water, which can be undertaken by either a public operator, or a private operator under a public-private partnership. With regards to the supplier of the best quality of water, all parties are trusted equally subject to appropriate regulatory and contractual arrangements being put in place.

With regards to the ability to reduce costs without reducing the quality of water and service, a public-private structure is considered most appropriate, while public operation is regarded as the second-best alternative. In the case of water/waste water treatment, we would expect public-private partnership contracts, that include Design/Build/Operate and long term service

contracts, to provide good value for money. This is argued due to the use of "whole life costing", but also due to increased competition, encouraging innovation and optimal risk transfer between public and private sectors.

Regarding charges, as already indicated in this report there exist no domestic charges in Ireland, while commercial charges are always set by the public entity that supplies services directly. Relevant stakeholders agree in sustaining this structure. Consumers are concerned that the adoption of the PPP approach might lead to the imposition of water charges on domestic water supplies. They strongly object to such a scenario.

Agreement for subsidising the costs of water supply and wastewater services is equally and mostly preferred if the operator is a public entity or a public-private entity. This scenario is negatively perceived for the case of a private entity. As the domestic sector does not pay for water it is considered that this question has limited relevance to Ireland, where the government operates through competitive water tenders for the delivery of specific services to the public sector. This is done either through public sector contracts, public-private partnership type contracts or by means of setting up joint venture agreements.

As far as protection of water for ecological reasons is concerned there exists agreement that either a public operator or a public-private partnership will be equally efficient. This is argued because regulatory functions would be seen more easily with public provision, although all parties are equally trusted to provide quality water subject to appropriate regulatory and contractual arrangements. However, monitoring the quality of water and initiating legal action against a supplier when the quality is poor, should be the responsibility of the public sector or a public sector organisation established specifically with this remit.

With regards to the ability to guarantee the extensive provision of water at any time, a private operator would be less trusted than a public or a public-private partnership, which are considered most appropriate. In so far as this relates to the treatment of water/waste water no difference between entities is perceived significant, as long as both are subject to the correct regulatory/contractual arrangements being in place.

With regards to maintaining the infrastructure for water supply and wastewater services, a public-private partnership is perceived more appropriate, while a public operator is considered to be the second-best choice. This is because maintenance of water networks is widely perceived as a public function. Moreover, water networks are a natural monopoly; hence it can be difficult to regulate. Finally, there exists the view that it might be very costly to achieve any real transfer of risk to the private sector regarding the maintenance of the existing underground assets, due to uncertainties about the quality of the existing network.

As far as ensuring sustainable water resources management the general view favours, on sustainability grounds, a mixture of public sector and the public-private partnership approach. It is important that private sector management skills are harnessed but also that the public sector is not de-skilled at the same time.

As far as additional regulation with regards to the protection of water resources for ecological reasons is concerned, the general view is that a public-private partnership will be the most appropriate structure of an operator. The option of a public operator was considered as the second-best scenario. This rating was based on the requirement that whichever entity is providing the services the regulatory standards should be much the same and set by the public sector. For reasons of potential conflict of interest (i.e. the public sector being the regulatory and service provider at the same time) it was acknowledged that there are advantages in having the private sector being the service provider and the public sector being the regulator. However as the private sector does not supply water in Ireland, it was considered inappropriate to rank it. Moreover, it was considered appropriate by the interviewees that contractual arrangements can be made to permit stronger enforcement of regulations.

On average respondents believed that more regulation will guarantee the extensive provision of water at any time if the operator is a public-private partnership, while once again the public entity was considered the second-best alternative. There is constant pressure for more regulation and this is likely to expose instances of conflict of interest where the public sector is both the service provider and regulator. It is considered likely that this pressure will be a factor in lending further some impetus to the public-private partnership approach.

Moreover, respondents believed that more regulation to maintain the infrastructure for water supply and wastewater services would be desirable if the operator is a public-private partnership, while once again the public entity was considered the second-best alternative. If the operator is a public entity the realisation that it is a non-profit making body tends to slightly reduce demand for more regulation relating to maintenance of the infrastructure. Domestic users are not charged for water supply in Ireland. In the event of the operator being a private entity or a public/private partnership the public perception will undoubtedly be that a more demanding regime relating to the maintenance of supply (quantity and quality) should be in operation.

The demand for more regulation on sustainable water resources management would be equally desirable if the operator is a private entity or a public-private partnership. The option of a public operator was not dismissed, but it rated as a second-best alternative.

As far as water service is concerned, respondents rated a public-private partnership as the most reliable service provided. A public provider rated second, while a private provider was considered the third-best alternative. Provided the contractual/regulatory framework is in place, the public-private partnership arrangement probably offers the best structure for ensuring maintenance of service. Part of the reason for this, however, reflects the tight budgetary position that water authorities find themselves in and the danger of under-investment in asset maintenance over time.

The public-private partnership was regarded as the operator who has the more tangible resources (personnel, equipment, communication systems, etc.) to offer the service, while the respective ability of the public sector was questioned. Generally private sector companies can offer a wider range of technical services, specialist staff and equipment, but against this, one must consider the knowledge of the water network often available within the public sector. However public servants were concerned about the effects of a public-private partnership on their employment. To add to these concerns, the NIC.ICTU was extremely concerned with the lack of workers protection in PPP recommendations and the insufficient time and resources allocated to search for other sources of funding outside PPPs. Moreover, respondents expressed that a public operator would probably provide a better customer service, with respect to willingness to help the client and give efficient service, than a public-private partnership.

Finally, the following standards for measuring the quality of service in Ireland's water sector were identified:

- The Department of Environment and Local Government has implemented Performance Management System for operation of pumping stations water and waste water treatment works and sludge treatment installations
- Semi state bodies such as the Environmental Protection Agency are responsible for monitoring drinking water quality and are also charged with responsibility for integrated pollution control licences.

3.2 Dynamics of the debate between 1995-2002

The experience so far from public sector water supply schemes has indicated a number of weaknesses, which are the following:

- Many public water supply networks have little or no spare capacity to meet development requirements.
- There are weaknesses in the water distribution system leading to substantial losses through leakage.
- There is an increasing need to protect water quality in rivers and lakes.
- A significant proportion of existing wastewater treatment systems requires upgrading to meet national and EU standards.
- There is a continuing demand for water and sewerage services to open up development land.
- The structure of water sector is complicated and fragmented. The small sized Sanitary Authorities affect economies of scale and thus they need to extend functional areas through co-operative agreements and outsourcing. Additional staffing is needed as well as continuing investment in training to provide a significant increase in numbers qualified.
- In the last ten years the level of monitoring by Sanitary Authorities has been inadequate.

Good quality public services are essential to the well-being and future development and prosperity of the community. However, it is widely considered that public services in Ireland are currently operating too often at levels well below

what should be the case in a modern society. Public services currently face increasing demands and expectations from the public, new regulatory requirements, pressures arising from emerging technologies and a general perception that public services are failing to deliver the necessary quality standards. In particular the infrastructure of the water sector has deteriorated as a consequence of under-investment over many years, though this trend has been recently reversed.

The National Water Study (NWS) looked at three alternative possible models for improving the structure of the Public Water Supply Sector and achieving the Vision for 2015 as this is guided by the European Water Framework Directive 2000. These are the following:

- Development of Regional Sanitary Authorities that would form organizations dedicated to the water and wastewater sector without distractions of other responsibilities. These would be limited in number and would be able to achieve economies of scale
- Outsourced Operation and Maintenance, where Local Authorities will retain the current ownership of water supply assets and contract out their operation and maintenance to private contractors.
- Co-operation and Outsourcing, where Local Authorities will retain the current ownership of water supply assets but encourage increased cooperation between all responsible bodies in the water sector and Local Authorities

Several advancements have been made with regard to these recommendations and in line with the European Water Framework Directive.

3.2.1 DELG Circular Letter L5/01

First, the DELG Circular Letter L5/01 has led down the actions required by Local Authorities to meet the recommendations set out in the NWS. In addition a strategic review of water resources has already been undertaken in Dublin while a similar one has been proposed for Cork. Such updated reviews of the water balance should be carried out in all the counties.

3.2.2 Catchment Based Strategy

The seven water source regions already defined by the Environmental Research Unit (ERU) in 1971, provide a possible basis for organising water supply on a regional basis. The regions are of such a size that in most cases all the water requirements of the region can be supplied from the available resources within each region. This would greatly facilitate the development of catchment based supply/demand balances and long-term investment programmes. Sources would be allocated to demands within the same region, thus avoiding the need to buy and sell water across purely administrative boundaries. Such a Catchment Based Strategy can be implemented in accordance with the ERU publication "Managing Ireland's Rivers and Lakes – A Catchment Based Strategy against Eutrophication". It is widely accepted that there are no other widespread quality problems in inland waters comparable to eutrophication and the purpose of the catchment based strategy is to arrest and reverse the eutrophication of the rivers and lakes.

3.2.3 Public Private Partnership

The debate on private sector involvement was intensified since January 1999, when the Department of the Environment and Local Government established a dedicated Unit to promote and facilitate the development of Public Private Partnerships (PPP) in the sectors for which the Department has responsibility, including the water services and waste management sectors.

The Government, the CBI (Confederation of British Industry Northern Ireland) and NICVA (Northern Ireland Council for Voluntary Action) are strongly in favour of private sector involvement in Ireland's water market in the form of PPPs. Although there is not a certain dynamic against private sector involvement some concerns are raised from consumers, trade unionists, and public servants.

Since the introduction of public private partnerships (PPP) in the water market in January 1999, there were allegations that water charges will be imposed on domestic water supplies, which were abolished with the effect of the Local Government (Financial Provisions) Act, 1997. The Minister of the Environment and Local Government, Mr. Noel Dempsey T.D. responded to these allegations on 25.05.2002 stating that these allegations were fundamentally wrong and that the current policy and legislation will continue.

Consumers and generally the public have concerns regarding private sector participation in the delivery of public services in relation to the water sector. The Government argues that PPP should be seen as part of a wider process of change (in line with market liberalization, regulatory reform and enhanced competitiveness) leading to a more

dynamic and successful economy in which quality public services play a vital role.

Public servants have worries about the possible impact of private public partnerships (PPP) on their employment. The Government however argued that there will be a continued and in many cases increased role for the public sector in the promotion of projects and the management and regulation of contracts. In this context the public sector can concentrate more fully on its role as a regulator, ensuring that environmental, public health, and safety standards are met, that the public interest is fully protected, and that contracts provide value for money. In addition many benefits will accrue to public servants through improved working conditions, training and transfer of skills from the private sector.

The Minister for the Environment and Local Government met with the Irish Congress of Trade Unions (ICTU) to discuss government policy in relation to Public Private Partnerships in the water sector. He argued that the Government policy is that the provision of water supplies should remain a public service. In his meeting with the ICTU, the Minister explained that government policy as outlined in the National Development Plan was to encourage the use of PPP for building and operation of water and waste water treatment plants. He explained that this was the most cost effective way of providing infrastructure and of improving the quality of service. He said it represented the best option for accelerating the investment programmes under the NDP and of ensuring that gaps in public infrastructure do not hold back future economic development.

The NIC.ICTU – Northern Ireland Committee, Irish Congress of Trade Unions after examining the PPPs Working Group review of PPPs (published in March 2001), expressed their extreme disappointment at the lack of protection enshrined in the recommendations for workers affected by the introduction of PPPs. In addition they were dissatisfied with the thrust of a number of recommendations issued by the Working Group and were concerned with regard to insufficient time and resources allocated to exploring alternative sources of funding.

The CIB Northern Ireland (Confederation of British Industry Northern Ireland) is concerned with the increasing infrastructure deficit in Northern Ireland, the need to improve the quality of public services and the need to secure better value for money from public expenditure. They believe that PPP has a key role to play in meeting these three objectives. All businesses in Northern Ireland have a fundamental interest in this issue, as users and funders of public infrastructure and services.

The NICVA (Northern Ireland Council for Voluntary Action) is also in favor of PPP in public services and regards this as a positive opportunity to move forward together with government and other social partners, towards a more socially cohesive, stable and prosperous future for all the community in Northern Ireland.

Overall, the Government's view is that Public Private Partnerships should not be considered as privatization of the water supply. As the Working Group review (2001) defined them, "PPPs are generally a medium to long term relationship between the public and private sectors (including the voluntary and community sector), involving the sharing of risks and rewards and the utilization of multi-sectoral skills, expertise and finance to deliver desired policy outcomes that are in the public interest".

The public sector and equally the private sector play and will continue to play a critical role in the provision of high quality public services in the water sector. Both sectors have in the past displayed strengths and weaknesses and have learned much from each other. PPPs simply bring together the best of public and private management and operations. The benefits that can arise from this partnership are: expertise knowledge, improved quality services, the delivering of value for money projects, the opportunities to attract private involvement into infrastructure sectors, and the provision of public services in an economically and efficient manner.

DELG and Government's commitment to Public Private Partnership (PPP) for the procurement of a wide range of projects has therefore been promoted through:

- Establishment of PPP units within the Department of Finance, Department of the Environment & Local Government, Department of Health and the National Roads Authority.
- Establishment of a cabinet committee, inter-departmental (PPP) group and PPP informal advisory group.

- New legislation – State Authorities (PPP Arrangements) Bill 2001.
- Framework agreement reached with the social partners.
- On-going PPP training courses (at three levels) and Awareness Seminars under the guidance of the Interdepartmental Group on PPPs (IDG).
- The set up of the PPP Fund for Local Authorities which provides start-up funding for projects outside the main investment programmes covered under the National Development Plan.
- Role-out of the developed common digital system – the Complete information System (CiS) and the new Local Authority Financial Accounting System.

The Minister for the Environment and Local Government announced a £2.1 Billion (approx. 2.67bn Euro) 3 Year Investment program in water and sewerage services for the years 2000-2002, the first phase of an ongoing rolling 3 year program under the National Development Plan 2000-2006. The National Development Plan (NDP) envisages expenditure exceeding £2.9bn (approx. 3.68bn Euro) over the years 2000-2006 on water and wastewater infrastructure. In addition a minimum £100m (approx. 127m Euro) of private finance will be invested in the water services sector over the NDP term (these were noted earlier in the report).

This will present challenges to all major players such as contractors, engineering services and local authorities in ensuring that the projects envisaged under the Plan are delivered.

However despite the high level of investment in infrastructure over the period of the last NDP there is still an infrastructural deficit relating to water and wastewater services. The PPP will play an increasing role in addressing the deficit by accelerating the delivery of projects and providing value for money to the Irish public through the use of more innovative design and delivery techniques.

3.2.4- Group Water Schemes

In relation to the current deficit, much of the infrastructure of Group Water Schemes was laid in the past 30 years approx. – commenced in the mid 1960's with the bulk of the schemes being constructed in the late 1970's, early 1980's. However, while the majority of the distribution network is of good sound quality in most counties, a sizeable proportion, as in most public schemes, is greatly in need of upgrading or replacement.

Under the Rural Water Programme, launched by the Minister of DELG on February 1998, County Strategic Rural Water Plans for Capital Grant Aid Approval have been completed in almost all counties on the partnership basis between the Local Authorities and the Group Water Scheme Sector. These plans, when agreed and adopted, will identify priorities and action programmes required to remedy deficiencies etc. The first stage of these Strategic Plans has already been agreed in most counties. The vast majority of privately sourced schemes will remain in private "community" ownership. Through the educational and development programme the National Federation of Group Water Schemes (NFGWS) is encouraging all such schemes to move away from "trustee" status towards the Co-op Society Ltd. (or Company) status, with each member or participant being offered shareholding in the Co-op. With the Design/Build/Operate approach as regards water treatment, now being actively encouraged, and pursued by the NFGWS, they are quite confident that with the new legal status, and with suitable tailored training, the Group Scheme Sector can be renewed and reinvigorated. The NFGWS acknowledges the desire of such schemes to remain in private community ownership and it therefore seeks to provide appropriate training to the Group Water Schemes in order to upgrade and modernise their schemes.

The "Rural Water Programme" also aims at the improvement of drinking water quality for Group Water Schemes. To achieve this it has undertaken the following actions:

- Establishment of the National Rural Water Monitoring Committee.
- Establishment of Local Monitoring Committees.
- Establishment of County Liaison Officers.
- Increased capital resources for the Rural Water Programme.
- Training facilities for the Group Scheme Sector.
- Investment in a number of group water schemes adopting innovative technology procured under the Design Build Operate (DBO), with operating periods of up to 20 years.

The National Rural Water Monitoring Committee (NRWMC) has compiled a Charter of Rights and Responsibilities of Consumers on Group Water Supplies which will be adopted by all group water schemes. The EU Commission is anxious that systems are put in place to allow individual consumers to make complaints and to have such complaints dealt with, both expeditiously and fairly. In addition, NRWMC has commenced a study to establish an equitable price for water transfer between Public and Private water supply schemes. Once a National Pricing Policy is agreed, both the Local Authorities and the GWS Private Group Schemes Sector will be regarded as "Water Producers/Providers" and will supply water to each other at "wholesale type" rates.

3.2.5 Current Legislation

A new Local Government Bill and Water Services Bill is currently being drafted. These are expected to consolidate Sanitary Authorities at county level and to provide for regional planning. The River Basin District approach, arising from the Water Framework Directive would serve this objective while the PPP initiatives will facilitate Co-Operative Agreements and Outsourcing.

3.2.6 Water Quality

In 2000 the Environmental Protection Agency (EPA) published its annual report on the quality of *Drinking Water in Ireland.* Overall, the quality of public water supplies was found to be satisfactory, with 91 per cent of samples tested being acceptable. The EPA estimated that Local Authorities produced and distributed over 90 per cent of the sampled drinking water.

The same report concluded that the quality of group water schemes continued to be unsatisfactory, with only 59% of samples tested being acceptable. As a response to these findings a new national water quality monitoring programme was established in year 2000 to test water supply sources continuously and as a result to become consistent with new regulations in relation to health related water quality parameters by 2003. Under the NDP EUR 553m have been provided to address the water quality deficiency of Group Water Schemes.

Additional steps that have been undertaken by the DELG are:

- Implementation of the phosphorus regulations.
- Implementation of the EU Dangerous Substances, Urban Wastewater Treatment and Nitrate Directives.
- Major investment in water conservation under the Water Services Investment Programme (WSIP).
- The implementation of Ground Water Protection Schemes as per the DELG, EPA and GSI Guidelines.
- The establishment of the European Communities (Drinking Water) Regulations, 2000 (SI 439 of 2000) on December 18, 2000 which will come into effect on January 1st, 2004. These Regulations transpose the EU Council Directive 98/83/EC of November 3rd, 1998 on the Quality of Water Intended for Consumption, into Irish law.
- Dedicated funding under the "National Development Plan 2000 – 2006".
- The commitment to the full implementation of the "Polluter Pays Principle" for all wastewater treatment projects.

In addition the DELG is preparing for the implementation of the Water Framework Directive 2000 with the appointment of Consultants for the first River Basin District – South-East.

Nevertheless, given that the EU Water Framework Directive applies to inland waters, transitional waters (estuaries), coastal waters and ground water and that its target is to achieve Good Quality Surface Water Status by 2015, including the biological and the chemical water quality, a great effort must be tailored into monitoring and reporting as well as controlling and protecting all water resources.

3.2.7 Implementation of the Polluter Pays Principle

Using the "Polluter Pays Principle" the Water Framework Directive 2000 proposes that Member States shall take account of the principle of recovery of cost of water services, having regard to economic analysis conducted and in accordance with the polluter pays principle. By 2010, Member States shall ensure that water pricing provides adequate incentives for users to use water resource efficiently and an adequate contribution to the recovery of water services costs. Nevertheless, in the absence of domestic water charges, the implementation of this principle is bound to receive political resistance.

3.2.8 Need for data collection and analysis

Current reports on water supply and demand, as well as on existing charges and fees are very limited. For the implementation of the Water Framework Directive 2000 and any other long-term sustainable policy for water resource management requires an extended nation-wide survey.

4 CONCLUSIONS

The National Water Study conducted by WS Atkins Ireland consultants (in association with P.J. Tobin Ltd and Mc. Cathy and Partners) identified and analysed three alternative possible models for improving the structure of the Public Water Supply Sector in Ireland. These models and the several advancements made afterwards, show the various ways of involvement and co-operation between the private and public sector. As identified in part three of this report these are the following:

- Development of Regional Sanitary Authorities
- Outsource operation and maintenance
- Co-operation and Outsourcing

The several advancements made with regard to these recommendations can be summarized as follows:

- The **DELG Circular Letter L5/01** has laid down the actions required by Local Authorities to meet the above recommendations and a strategic review of water resources has already been undertaken for Dublin and proposed for Cork County.
- The **Catchment Based Strategy** under which the seven water source regions that were defined by the ERU in 1971, can serve as potential administrative boundaries for organizing water supply on a regional basis. This Strategy can facilitate the development of catchment based supply/demand balances and long term-investment programs.
- The development of **Public Private Partnerships** since January 1999, where a PPP is a partnership between the public and private sector for the purpose of delivering a project or service traditionally provided by the public sector, and in our context for the provision of water and waste water services. In the water services sector a number of 100 potential projects have been identified and although some difficulties are acknowledged in the wastewater management sector, these will soon be overcome for the commencement of the building of the necessary infrastructure, most of which will be provided through PPP arrangements.
- With regards to **Group Water Schemes**, the vast majority of private sourced schemes will remain in private community ownership. The National Federation of Group Water Schemes (NFGWS) is encouraging such schemes to move towards a "company status" with each member being offered shareholding in the Co-op. The NFGWS provides appropriate training to the participants of these schemes and with their new legal status the Group Water Scheme Sector can be renewed and reinvigorated.

As far as water legislation is concerned, the new Local Government Bill and Water Services Bill is currently been drafted to consolidate Sanitary Authorities at county level and to provide for regional planning.

An annual report is published by the EPA in relation to **drinking water quality** and a number of other measures have been undertaken by the DELG.

The implementation of the **polluter pays principle** must be undertaken in line with the Water Framework Directive 2000, and an extended nation-wide survey must be undertaken for the purposes of **data collection and analysis.**

The debate on private sector involvement was intensified since January 1999 when the DELG introduced Public Private Partnerships in the water sector.

The general view is that the Government, the DELG, the CIB and the NICVA are in favour of private sector involvement in Ireland's water market in the form of PPPs.

Ireland' a water sector is changing as a result of regulatory reform, market liberalization and increased emphasis on enhanced competitiveness. As the Minister of DELG argues "PPP should be seen as part of this wider process of change leading to a more dynamic and successful economy in which quality public services play a vital role".

PPP is playing an important role in the delivery of the National Development Plan, and is having a dramatic impact, not just at the individual project level, but in changing Ireland's approach to infrastructure delivery. As the Minister of the DELG argues "in many ways PPP is a concrete expression of the movement over the past decade to modernise the public service, improving

efficiency and effectiveness and focusing on quality customer service; allied with the concept of partnership which has been so important in delivering, on Ireland's economic success".

In contradiction to all these, consumers, public servants and the NIC.ICTU have some concerns relating to private sector involvement in the water market. Consumers are worried about water charges being reintroduced on domestic water supplies. Public servants have worries about the possible impact of PPPs on their employment. The NIC.ICTU are disappointed at the lack of protection enshrined in the recommendations for workers affected by the introduction of PPPs and with a number of recommendations issued by the Working Group. They are also concerned with regard to insufficient time and resources allocated to exploring alternative sources of funding.

The provision of high quality public services and associated infrastructure is the key to social and economic success and public sector bodies have played, and will continue to play, a critical role in this respect. Equally the private sector has played an important role in the delivery of public services. Both sectors have their strengths and weaknesses. As the PPP Working Group recognizes the future delivery of public services can be viewed as building on these strengths by developing diverse delivery mechanisms that can be innovative, effective and give best value for money.

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APPENDIX

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