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STUDY ON THE APPLICATION OF THE COMPETITION RULES TO THE WATER SECTOR IN THE EUROPEAN COMMUNITY

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STUDY ON THE APPLICATION OF THE COMPETITION RULES TO THE WATER SECTOR IN THE EUROPEAN COMMUNITY

Final Report

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PREFACE TO THE STUDY

WRc was contracted by the European Commission to undertake a study into the application of the European Community (EC) competition rules and policies to the water sector. WRc worked with experts from Ecologic, based in Berlin, Germany, who provided the input for chapter 5 of the study.

The aim of the study was to provide a report on the applicability of EC competition rules to the water sector and to include:

- A description of the legal and economic framework of the water regime in the EC and its member states
- Identification of possibilities for increasing competition (or why not if appropriate), and ways in which the regulatory framework can be improved
- Exploring ways for EC competition rules to contribute to effective competition in the water sector, as it is currently structured

The Report covers the tasks described in the study's terms of reference and includes the following subjects:

- A brief description of the legal regimes operating in each European Union member country that apply to the water industry
- An outline description of the structure and ownership issues of the water industry in each European member country. These are included in Annex 1 to the report for each member state
- A review of the key economic issues of the water industry
- A review of economic concepts for market competition in the water industry
- A review of EC competition rules and policies in the context of their contribution to competition in the water industry
- A description of the interaction in the water sector between EC competition policy and other EU policies on the establishment of a common market
- An identification of regulatory solutions which could supplement or complement the application of EC competition rules and policy to open up the waters markets to competition

Annex 2 to the study describes the bibliography, information collection methods and tools used by WRc and which could be used by the Commission to obtain further information. In addition Annex 2 contains an outline strategy for consultation with third party organisations on the results of this study.

The intention of this study has not been to establish any definitive conclusion regarding the introduction of competition in the water sector, but to provide an indication of the sort of options that exist within the context of European Commission rules and policies. It also looks to raise the issues and provide stimulus to a debate that needs move forward for the sector; service providers, regulators and customers. The report provides an overview of these main issues and is not intended to provide comprehensive detail on all the issues.

1. INTRODUCTION

The European Union's competition policy "*aims to prepare and develop a state of effective competition in the common market by impacting on the structure of markets and the conduct of market players*". (Preface: Competition Policy in Europe and the Citizen). This policy is relevant to the water sector in the sense that the EC has a policy of applying competition policies to all service providing industries. This policy has been applied to other network industries like the energy, transport and telecommunications industries and purports to have improved the competitiveness of wider European industry.

Network industries provide essential services to industry and to citizens. (Commission Communication on Services of General Interest in Europe OJ 17 of 19.01.2001,page 4), and these citizens and customers can be protected by competition rules and policies which can prevent abuses to customers from monopoly suppliers of products or services.

The influence of competition policies on monopolistic economic sectors such as telecommunications and energy has created efficiency improvements and benefits for customers in terms of lower prices and a greater diversity in services and choices for consumers. These industries have in general, also benefited from greater increases in innovation, research and investment, and in many cases establishing themselves as leading international businesses. These developments have the potential impact of benefiting member state customers with higher quality services and lower prices resulting from better efficiencies.

The policy of developing competition principles into sectors, which have commonly been considered only possible to provide as a monopoly, is indicative of a pressure to seek further efficiencies in the cost base of Europe's economic activity. This process of looking to see how EC competition rules could be best applied in the water sector is about making a contribution to promote greater efficiency and higher levels of service in the sector. It is not about the promotion of private sector participation, nor is it about liberalism per se.

In network industries, the EC, and a number of its member states, have developed a concept of separating the network infrastructure (such as transmission lines, cable telecom) and the services provided over this infrastructure. This distinction is generally made in order to enable the introduction of effective competition in the provision of these utility services, whilst recognising that it is often extremely difficult and uneconomic to establish competing infrastructures. As the policy states for these industries - "the infrastructure is thus merely the vehicle of competition". And as has happened or is developing, monopolistic suppliers and owners of network infrastructure in telecommunications, electricity and gas are granting access to third parties that wish to provide the services offered on their networks. The EC regards the example of end user service competition in the telecommunications sector, as the best case for opening up network utilities to service competition. It is also the best example, which purports to have increased efficiency in the sector and delivered better services and prices to customers, and created enhanced economic opportunities for business and employment.

The application of a policy to introduce open access to the water and wastewater networks, however, can pose a number of particular challenges, especially in relation to public health and drinking water quality, and of environmental quality from wastewater discharges. However, despite these particular challenges there are in fact many similarities between the water industry and other network utilities. If the tenets of competition in the water sector are valid they will need to be fully considered to ensure that the industry operates in a "competitive" manner and can deliver high quality services at a fair price to its customers. If the same competition process is not to be applied, how can the forces of competition nevertheless be applied in the sector, perhaps with the establishment of a regulatory or

comparative performance framework for the industry that simulates competitive pressures for the industry.

Problems of the economic costs of transport of water and a lack of accountability for water quality have been cited as the main objection to the introduction of third party access to the water industry network. If this is accepted, there nevertheless remains the problem of a natural monopoly process within the water industry and the need to identify and implement mechanisms, which provide the means of avoiding an abuse of monopoly position. It is not just an issue for the private sector suppliers of water sector services because an abuse of monopoly position can be just as applicable in the public sector as well as the private sector.

So why look at the water sector in the context of competition policy? There are a number of specific economic and customer service issues that indicate that this a worthy of consideration. These include:

- Massive funding needs in water and wastewater services in Europe for enhanced public health and environmental improvements
- Upward pressure on customer bills to pay for investment and to meet requirements for greater cost recovery and transparency in financial management of services
- Increases in customer expectations and demands for high quality and value for money services
- Budget constraints faced by public authorities of member states

The tradition of water and wastewater services as a municipal service is strong across all member states, except that it is weak in the UK (especially since 1974 and regionalisation of the water authorities). Any reform process in the water sector across Europe, which seeks to embody or further develop a state of competition would need to done within the context of the current structure

The ownership and responsibility of the service provision is in most cases regarded as an essential public service for which local public political representatives must be accountable. It is therefore likely that in the water sector there will be always be a tension between the balance of establishing an optimal economic model and resulting efficiencies for the sector, and the political priorities of those responsible for providing the service.

The future role and development of regulation to enhance the application of EU competition policy in the sector may also have an important role to play in the implementation of competitive forces. In this context the development of establishing a process of comparative performance publishing has been mentioned and it may be that these points have merit for future analysis.

Against this background the aim of this study is to provide a report on the applicability of EC competition rules to the water sector and consider what other measures could be used to introduce more competition into the sector.

Chapter 2 provides a brief description of the legal regimes operating in the EU that apply to the water industry as well as an outline description of the structure and ownership issues of water and wastewater services in each European member country. The individual country reviews are contained in Annex 1 of the report

Chapter 3 is devoted to a brief review of the key economic issues of the water industry.

Chapter 4 reviews concepts for market competition in the water industry.

Chapter 5 reviews the EU competition rules and policies in the context of their contribution to competition in the water sector. This chapter also includes, where appropriate, references to other EU policies relevant on the establishment of the Common market.

Chapter 6 identifies regulatory solutions that could supplement or complement the application of EU competition rules and policy in the water sector.

Some concluding remarks are made in Chapter 7.

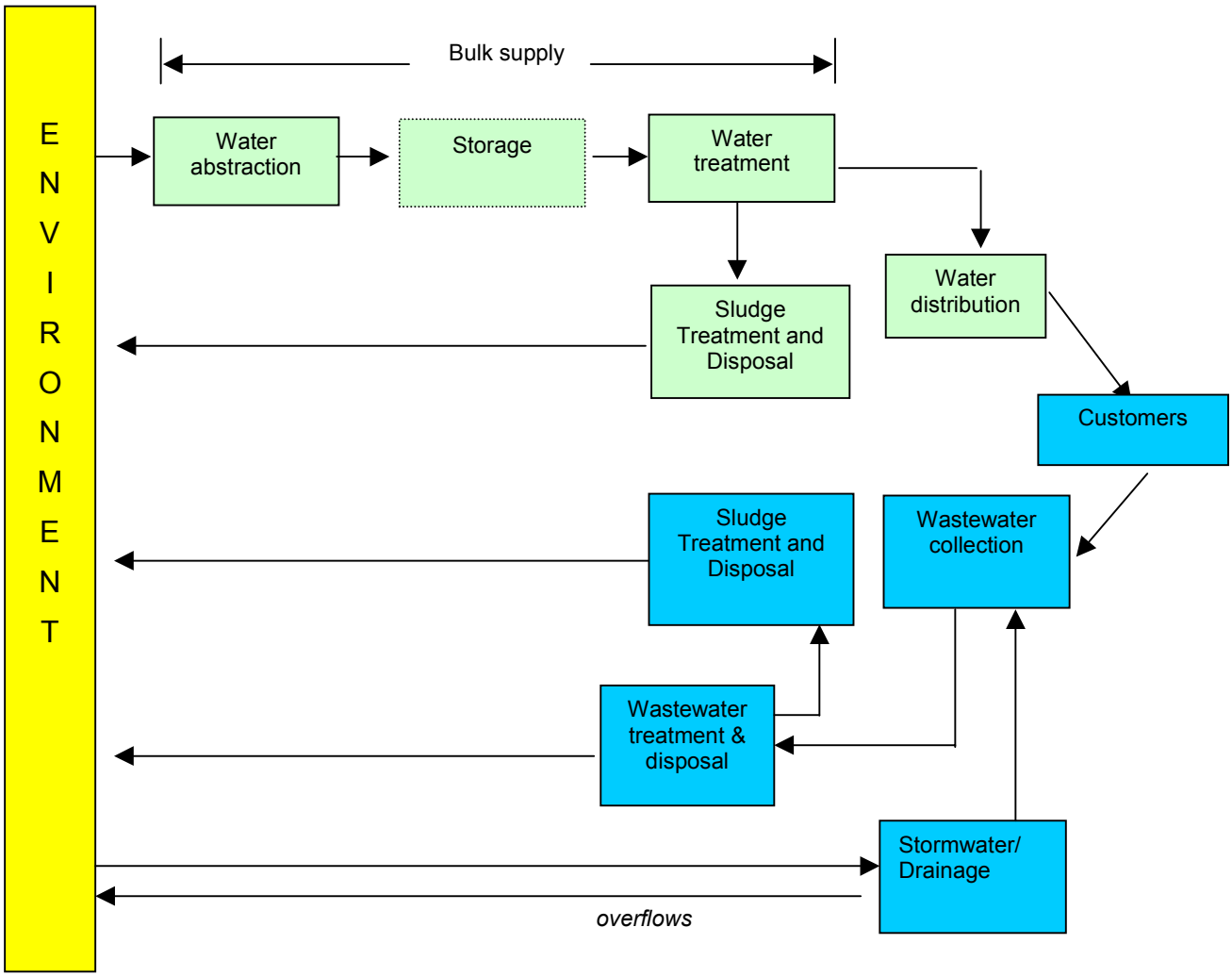
2. THE LEGAL REGIME AND STRUCTURE IN THE WATER SECTOR IN THE EU AND ITS MEMBER STATES

2.1 INTRODUCTION

This chapter provides a brief review of the structure of the water industry and the legal regimes that impact the water industry. In particular it reviews relevant EU legislation on competition and on public utilities, but also covers legislation specific to the water sector. The chapter also includes an outline review of structure of the water sector in member states, whilst the individual country reports are included in Annex 1. A summary of key findings resulting from this review are included in section 2.5 of this chapter. However first it describes the technical features of the water and wastewater sector.

2.2 TECHNICAL CHARACTERISTICS OF THE WATER SECTOR

The diagram below illustrates the main technical components of the water and wastewater system that is prevalent in most European member countries. This section describes the technical characteristics of the water industry as a vertical chain of interrelated activities.



2.2.1 Abstraction

Abstraction involves taking water from the environment for subsequent treatment and supply. Types of source include rivers, reservoirs, lakes and underground aquifers. In some places where water is particularly scarce, it is economic to source water from the sea and apply expensive desalination processes.

In some countries water abstraction is controlled through abstraction licences, by government environmental protection agencies, such as the Environment Agency in England. In other countries, such as Sweden, Denmark and Germany, abstraction is controlled by regulatory authorities at a local regional or municipal level, conforming to national guidelines. In the future water abstraction will be management in the context of river basin management plans under the supervision of river basin authorities, such as those in Spain and recently established in Italy.

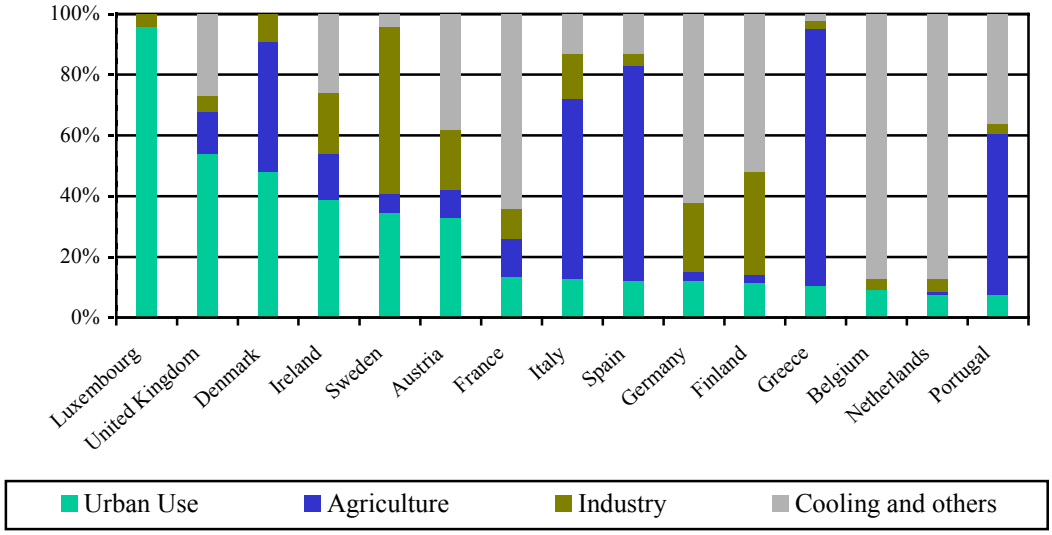
There are usually four main types of use for the quantities of abstracted water:

- Public water suppliers (for input to public networks)
- Agriculture (including spray irrigation)
- Industry (large industrial users)
- Private water supply (small domestic users)

Many large industrial users and agricultural users in a number of member states, Austria, Germany, Sweden, Finland, France, Spain, Ireland and others have a mixture of their own water rights and abstract directly for their own economic use with Water Boards or similar organisations regulating the main uses of water resources. Water Boards have strong regulatory powers on abstraction in countries such as in the Netherlands and Denmark. Where there is regulation this is usually at a regional or local level. Though the introduction of the Water Framework Directive (WFD) will necessitate that these users abstract within the structure of a river basin management plan (refer to section 2.4.1).

Water abstraction controls are mainly influenced by ecological considerations – protection from pollution and over abstraction, although market forces are starting to be applied in this area in the form of licence trading. In theory, licence trading could result in the optimal distribution of water resources between sectors and contribute to sustainable development. This is being developed in some countries such as the Spain and in the UK where water production competition is being introduced for the provision of water services to large users. Whatever the consequences of the WFD, the effects to customers and environmental consequences of introducing a tradeable abstraction market need wider practical consideration in the European context. There are likely to be significant differences between Member States with regard to the practical benefits of implementing licence trading and these would need to be further investigated.

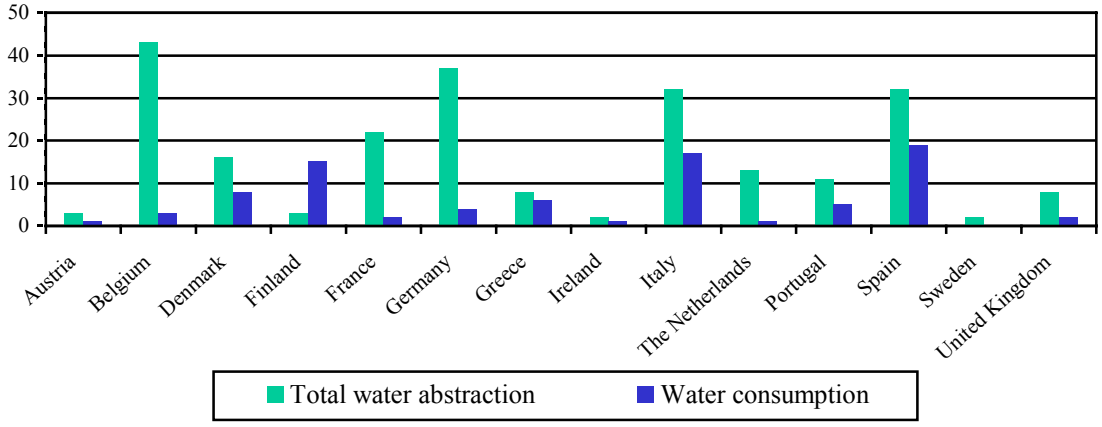
Sectoral water use in Europe



Use of abstracted water in Europe

18% - public water supply
30% - agriculture (mainly irrigation)
14% - industry, excluding cooling water
38% - power (hydropower, cooling water) and miscellaneous or non-defined uses

Source: EEA (1999c)



2.2.2 Water Treatment

Water treatment involves purifying raw water for input to the distribution system. Different degrees of treatment are required depending on the characteristics of the source water. As a general rule, groundwater is the most pure source of water and treatment often comprises disinfection only. Surface water (from lakes, reservoirs and rivers) is usually more complex to treat and therefore more expensive. Salt water is the most expensive type to treat and involves complex reverse osmosis treatment processes; Spain and Greece are the main users of desalination plants, though other utilities with water shortages are considering its use.

The principal requirements for drinking water are that it be free of pathogens and toxic chemicals. The prime objective of water treatment is disinfection, and one of the purposes of prior stages of treatment is to "prepare" the water for disinfection. For example, chlorine is the most commonly used disinfectant and unless materials such as turbidity and colour, that exert a chlorine demand, are removed from the water, the efficiency of disinfection may be impaired. Many municipalities in Germany insist that chlorine should not be used and hence their spend on distribution pipes to maintain water quality in the system is very high. High levels of turbidity can also protect micro-organisms from the effects of disinfection and can stimulate the growth of bacteria in treatment works and the distribution system.

Almost everywhere, all aspects of water supply are highly regulated for public health reasons and this adds significantly to the cost (and risk) of undertaking the activity.

Agricultural use usually requires no or very little treatment. Industrial users either abstract from their own sources or access the public system. Different industries will have their own requirements for water quality, and this can conform to the public supply or their private supply; if not there will be pre-treatment facilities on site. For example, the industries requiring high standards of treatment will include any industry that provides food or drink for human consumption; other industries will have specialist requirements that relate to the hardness or the softness of water for the efficiency of industrial processes e.g. brewing companies. Other examples include; increases in iron causes problems with photographic emulsions, and changes in corrosivity can have dramatic impacts in steam generation plants, boilers etc. The major problems in treating industrial feedwaters are organics, silica and hardness; process selection depends on the anticipated nature and concentrations of these impurities. Changes in the quality at the point of supply can have effects upon on-site treatment in terms of process conditions and costs of treatment, and where the user is not informed of changes in water quality, the effects can be catastrophic

2.2.3 Bulk supply and local Storage

"Bulk supply" or "wholesale" is terminology commonly used to mean water abstraction and treatment. In many EU countries, the vertical integration of water supply is broken at this point so that one regionally based organisation undertakes bulk supply and another at a municipality level, undertakes distribution to users. Competition between bulk suppliers can exist in some situations and can either involve operation and ownership of assets or just the operation of assets.

Bulk supply can be provided to water scarce areas either within or between country boundaries. However, water is relatively heavy and expensive to transport and so this is the exception rather than the norm.

2.2.4 Distribution

Water distribution involves the transport of water from treatment plants to individual users via a network of underground pipes. Apart from pipes, other infrastructure that is required includes pumps, service reservoirs and water towers (for buffer storage) and valves, hydrants, meters, etc.

In the majority of Member States, water distribution networks are locally based and are often restricted to the geographical areas for which the municipality or municipal utility has responsibility. Though there are often instances that these networks are connected "cross border", particularly between large urban utilities and surrounding smaller towns and villages. In general these networks were constructed and operated as public service monopolies by municipality or regional political.

In some countries water networks can be highly connected particularly in regionally structured water supply utilities and in large urban utilities, which can frequently serve neighbouring municipalities. In these situations there can be a large number of supply points. In times of water shortage, the networks can often re-routed so that surplus water in some areas can be diverted to areas of shortage. This can make it difficult to draw the boundary between water production and distribution and these in circumstances water services are often vertically integrated. In municipality utilities it is frequently the case that the water resource and distribution system is separated, with a regional water supply entity providing water to a number of municipal utilities; such as in Belgium.

The concept of common carriage in the distribution system, established as a concept with other utility services, is also being explored by water industry professional and economists, where the network owner allows access to a third party to supply some or all of its customers. However, there are significant technical difficulties here since mixing different waters can lead to water quality problems and potential health problems. Therefore, liability arrangements need to be carefully considered in advance.

- Water can be regarded as a perishable product, which can undergo undesirable changes during distribution and storage. These changes might cause the water to fail the stringent statutory standards of quality. The time taken for these changes to occur can be viewed as a form of shelf life. The mixing of water may influence this shelf life, and the additional residence time associated with the conveyance of waters over long distances cause the water to have exceeded its shelf life before delivery to the customer.
- Treated water is an unstable product of highly variable source dependent quality. It is currently treated on the basis of a define shelf life and within defined zones of the distribution system. There are a number of specific technical, health and quality issues relating to blending or mixing of waters. These include increases in sediment deposition and consequent build up of biological contamination, resulting in an increase in disinfection and probable increases in maintenance costs.

2.2.5 Wastewater collection

The modern sewerage system is the basis of effective public health control. It is required to transport a variety of wastewaters cost-effectively to a site where sewage treatment can be performed before discharge to a receiving water.

For many years, sewers were constructed as combined drainage systems in which all surface water runoff and foul sewage were conveyed in the same pipes. Recently there has been an increasing preference for separate systems in which all runoff from paved areas is carried by surface water drains, and the foul sewers carry only foul wastewater. The reasons for doing are mainly technical in so far that a separate foul system will generate a more constant hydraulic flow for the treatment works. In between these two extremes, are partially separate systems where only part of the surface water runoff (often that from roofs and backyards of buildings) is taken into foul sewers, the remaining runoff from roads and similar paved areas is carried by separate surface water sewers.

The choice of system depends on the costs of installation, the quality of surface water discharges, pollution from storm sewerage overflows in combined sewers, control of grit and other material, and the costs of sewage treatment.

The average daily flow of wastewater in a sewer is usually determined by water consumption but the peak rate of flow in dry weather can vary between two to four times the average rate over 24 hours. The minimum flow can typically be half the average flow. However, because of the need to size sewers in separate and combined systems based on providing sufficient capacity for transport, they are usually designed on the basis of intensity and duration of rainfall during heavy storms.

To save costs, storm sewage overflows are often provided on combined sewers (refer in next section below). These allow relief of the sewerage system during heavy rainfall by diverting excessive flows to a stream or river, so that the sewer downstream can be smaller. A large sewer system can have many storm sewage overflows. Unfortunately, the overflow from combined sewers is of foul sewage diluted with surface water, and is therefore polluting. This can result in damage to a watercourse and visually offensive conditions.

Wastewaters can be broadly divided in two categories – domestic sewage which arises from the use of piped water in the home, and industrial effluents which arise from virtually all types of commercial manufacturing processes. The latter are of concern because industrial wastes, if discharged to sewer when untreated, can contain toxic materials which interfere with sewage treatment.

Most sewer systems carry complex mixtures of domestic sewage and partially treated industrial effluents. In addition, the volumetric flows of wastewater may be affected by infiltration of ground water, particularly in old sewer networks.

The type of sewer system has a marked effect on sewage treatment. When designing new works, or extensions to existing works, it is important to take these effects into account. It is essential to characterise the wastewater by monitoring, sampling and analysis. The relationship between dry weather flow, average flow and peak flow should also be determined. Such considerations can often influence the choice of treatment process – it is well know, for example, that the extent of flow variations in small networks is much greater than that in large systems.

Wastewater collection system management is inextricably linked to the management of urban drainage, resulting from rainfall, and its safe and efficient discharge to rivers. A significant priority for investment and operational expenditure will be the protection of domestic and commercial properties from flooding. In most member countries this responsibility is one which the municipal utilities responsible for wastewater collection and drainage management, will play a leading management role.

This element of the supply chain has in Europe lent itself to natural monopoly because of the important role in which municipalities have played in constructing and managing collection systems; and as a result of the regulatory system for the protection of water courses, which is enforced at local levels. The wastewater collection and drainage part of the water cycle is one that local government authorities are most likely to still operate and fund from local taxation rather than specific discrete charges.

Stormwater treatment

Storm wastewater treatment processes are used to reduce the quantity and or improve the quality of spills of combined wastewater and stormwater runoff, thereby ensuring that receiving water quality objectives are met.

During rainfall events, the flow of wastewater in combined sewer systems increases as a result of the volume of runoff entering the system. To reduce the size and hence cost of sewers, overflow devices are installed to allow relief of the system when certain levels of flow are reached. These combined sewer overflows (CSOs) regulate a maximum flow that can pass through the sewer (continuation flow) with

the excess being spilled either to off-line storage or directly to a receiving water. It needs to be remembered that stormwater itself can be heavily polluted.

Storage normally contains the highly polluting "first foul flush". It also limits the volume of untreated storm sewage spilled during storms. Other methods involve limiting the volume of surface water runoff and treating it to reduce the polluting load discharged by CSOs to the watercourse.

2.2.6 Wastewater treatment and sludge disposal

Wastewater Treatment

Achieving the treatment objectives for a particular wastewater involves process selection based on an initial comparison of the influent wastewater characteristics to the effluent consent.

The challenge for the wastewater process engineer is the evaluation of options and optimum selection of processes into an integrated flowsheet.

Historically, to assist the engineer, processes have been grouped together by increasing levels of treatment. The terms for wastewater of preliminary, primary, secondary and tertiary treatment and for sludge of sludge thickening, stabilisation, dewatering, thermal treatment and sludge handling have been used. Although these terms represent rather arbitrary levels of treatment, they do aid the design of works.

A brief description of each of these groupings is given below.

Preliminary treatment is the removal from wastewater of constituents that may cause operational or maintenance problems to subsequent treatment processes. Examples include screening and grit removal.

Primary treatment is the removal of solids and associated organic matter by sedimentation in settlement tanks. Chemicals additives are sometimes used to enhance the settling process.

Secondary treatment involves the removal by biological oxidation of the organic matter which remains after primary treatment. This group of processes also includes those which remove nutrients such as nitrogen and phosphorus from the wastewater. Examples include activated sludge, biological filters and biological aerated filters. Most of these processes involve a sedimentation stage to separate treated solids from the final effluent.

Tertiary treatment is the removal of residual organic material from an effluent that has received secondary treatment. Tertiary treatment is installed in order to consistently produce a high quality effluent. Processes include filtration and nitrification. Disinfection can also be classified as a tertiary process.

Sludge thickening is practised to reduce the volume of sludge and provide cost savings in downstream process plant.

Stabilisation is required to meet the legislatory requirements for disposal of sludge to land.

Dewatering is practised at large works to reduce the cost of sludge disposal.

Thermal treatment is practised at large works to reduce the cost of disposal and where disposal sites are limited.

Sludge handling involves moving sludge from unit processes to further unit processes or to final disposal.

Industrial wastewaters are generally treated before entering the public collection system or disposed independently of the system with separate agreements for treatment needs with regulators.

Sludge Treatment Processes and Disposal Routes

To bring the importance of sludge into perspective, the cost of sludge treatment and disposal can be about half the total cost of wastewater and sludge treatment and disposal. Sludge treatment and disposal should be regarded as an integrated function. In fact, the disposal route for sludge may determine the sludge processes selected at a wastewater treatment works.

The objectives for sludge treatment and disposal are: to transfer the sludge to a suitable disposal site meeting any set standards, without causing nuisance or offence and to do so efficiently and economically.

There are many wastewater processes producing sludge, many sludge treatment processes able to meet the set standards, many other processes that are capable of reducing sludge treatment costs and a number of suitable disposal routes all within an integrated function. Sludge treatment processes which can meet standards set for stabilisation prior to disposal are: aerobic digestion, anaerobic digestion, storage. Processes which reduce costs of disposal by reducing water content and hence volume are: thickening, dewatering, drying, incineration.

Increasingly, some form of reuse is becoming more important as the most environmentally sustainable solids or sludge disposal route. Often taxes apply to the landfill route and the food industry is becoming increasingly concerned about spreading to arable land. Dumping to sea is also illegal in Europe (UWWT Directive). Incineration is relatively expensive and has stringent environmental safeguards attached. Reuse, despite being the preferred option for disposal, does seem to becoming increasingly difficult to implement in the medium to long term as national governments legislate to impose stricter agricultural standards.

2.2.7 The Customer Service

All the above system elements of the water industry describe the "technical" component of the provision of services unique to the water industry. Not so unique to the water industry is the fact that it like any other industry is a provider of a product and service to a variety of customers and that customers of that product and service have expectations as to the manner and quality in which it is provided. These "levels of service" expectations can be categorised as:

- Quality orientated (including security of supply)
- Service orientated
- Value for Money

These are discussed further in chapter six in the context of the application of regulatory solutions.

2.3 RELEVANT EUROPEAN COMMUNITY LEGISLATION – RELATING TO COMPETITION AND ACTIVITIES OF PUBLIC UTILITIES

The section provides an overview of the main legal instruments and provisions in EC law which relate to the activities of utilities, in particular water utilities. Firstly, the main competition rules will be described. Secondly, an outline of some rules relating to the establishment of the Internal Market will be presented.

2.3.1 The Competition Rules

Article 86 of the EC Treaty provides in the first place that in the case of public undertakings and undertakings to which Member States grand special or exclusive rights Member States shall neither enact nor maintain in force any measure contrary to the Treaty rules on competition (including rules state aid) and on Internal Market. The Court of Justice interprets "undertaking" in a broad manner. Thus, the concept of an "undertaking" encompasses every entity engaged in an economic activity, regardless of the legal status of the entity and the way it is financed[1].

Public undertakings, exclusive and special rights are to be understood as[2]:

"Public undertaking" means any undertakings over which the public authorities may exercise directly or indirectly a dominant influence by virtue of their ownership of it, their financial participation therein, or the rules which govern it. A dominant influence on the part of the public authorities shall be presumed when these authorities, directly or indirectly in relation to an undertaking: (a) hold the major part of the undertaking's subscribed capital; or (b) control the majority of the votes attaching to shares issued by the undertakings; or (c) can appoint more than half of the members of the undertaking's administrative, managerial or supervisory body.

"Exclusive rights" means rights that are granted by a Member State to one undertaking through any legislative, regulatory or administrative instrument, reserving it the right to provide a service or undertake an activity within a given geographical area.

"Special rights" means rights that are granted by a Member State to a limited number of undertakings, through any legislative, regulatory or administrative instrument, which, within a given geographical area:

- limits to two or more the number of such undertakings, authorised to provide a service or undertake an activity, otherwise than according to objective, proportional and non-discriminatory criteria, or
- designates, otherwise than according to such criteria, several competing undertakings, as being authorised to provide a service or undertake an activity, or
- confers on any undertaking or undertakings, otherwise than according to such criteria, any legal or regulatory advantages which substantially affect the ability of any other undertaking to provide the same service or to operate the same activity in the same geographical area under substantially equivalent conditions.

Article 86 also provides that undertakings entrusted with the operation of services of general economic interest (or having the character of a revenue producing monopoly) shall be subject to the rules on competition (including state aid) and on internal market in so far as the application of such rules does not obstruct the performance, in law or in fact, of the particular tasks assigned to them. The development of Trade must not be affected to such an extent as would be contrary to the interests of the Community.

The new Article 16 in the EC Treaty confirms the place of the services of general interest among the shared values of the Union and their role in promoting social and territorial cohesion, without prejudice

[1] See, for instance, judgement of 23 April 1991, in Case C-41/90 Höfner, ECR [1991] p. I-1979, point 21.

[2] See Article 2(1) (b), (f) and (g) and Article 2(2) of Commission Directive 80/723/EEC on the transparency of financial relations between Member States and public undertakings as well as on financial transparency with certain undertakings, as amended by Directive 2000/52/EC of 26 July 2000, OJ L 193 of 29.7.2000, p. 75.

to the application of the competition and internal market rules. The Commission has clarified its view with respect to services of general interest in the context of the application of the competition and internal market rules in its 2001 Communication on Services of General interest in Europe[3].

The relevant EC rules on competition are, in the first place: Articles 81 and 82 of the EC Treaty, the Merger Regulation and other related secondary legislation, such as for instance the regulation on vertical restraints or similar legislation. These rules aim at preventing anti-competitive behaviour by undertakings.

Article 81 (ex Article 85)

1. The following shall be prohibited as incompatible with the common market: all agreements between undertakings, decisions by associations of undertakings and concerted practices which may affect trade between Member States and which have as their object or effect the prevention, restriction or distortion of competition within the common market, and in particular those which:
(a) directly or indirectly fix purchase or selling prices or any other trading conditions;
(b) limit or control production, markets, technical development, or investment;
(c) share markets or sources of supply;
(d) apply dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage;
(e) make the conclusion of contracts subject to acceptance by the other parties of supplementary obligations which, by their nature or according to commercial usage, have no connection with the subject of such contracts.

2. Any agreements or decisions prohibited pursuant to this Article shall be automatically void.

3. The provisions of paragraph 1 may, however, be declared inapplicable in the case of:
- any agreement or category of agreements between undertakings;
- any decision or category of decisions by associations of undertakings;
- any concerted practice or category of concerted practices, which contributes to improving the production or distribution of goods or to promoting technical or economic progress, while allowing consumers a fair share of the resulting benefit, and which does not:

(a) impose on the undertakings concerned restrictions which are not indispensable to the attainment of these objectives;
(b) afford such undertakings the possibility of eliminating competition in respect of a substantial part of the products in question.

Article 82 (ex Article 86)

Any abuse by one or more undertakings of a dominant position within the common market or in a substantial part of it shall be prohibited as incompatible with the common market insofar as it may affect trade between Member States. Such abuse may, in particular, consist in:
(a) directly or indirectly imposing unfair purchase or selling prices or other unfair trading conditions;
(b) limiting production, markets or technical development to the prejudice of consumers;
(c) applying dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a competitive disadvantage;
(d) making the conclusion of contracts subject to acceptance by the other parties of supplementary obligations which, by their nature or according to commercial usage, have no connection with the subject of such contracts.

In addition to the antitrust rules, the rules on State Aid are contained in Articles 87 and 88 of the EC Treaty. These rules aim at avoiding that any aid granted by Member States or through State resources distorts or threatens to distort competition by, for instance, favouring certain undertakings, insofar as it affects trade between Member States.

Transparency of financial relations between public authorities and public undertakings on the one hand, and within certain undertakings (public or private) which have been granted special or exclusive rights or entrusted with the operation of services or general interest on the other hand, is necessary in order to ensure the application of Article 86 and to monitor that aid is compatible with the common market. The

[3] OJ C 17 of 19.1.2001, p. 4.

Commission adopted a directive[4] aiming at ensuring this transparency objective. Its aim is to acquire detailed data about the internal financial and organisational structure of public undertakings and undertakings to which Member States grant exclusive or special rights, in particular separate and reliable accounts relating to different activities carried on by the same undertaking. Different activities means, on the one hand, all products or services in respect of which a special or exclusive right is granted to an undertaking or all services of general economic interest with which an undertaking is entrusted and, on the other hand, each other separate product or service in respect of which the undertaking is active.

Undertakings subject to the transparency obligations.

Concerning the transparency of the financial relations between public authorities and public undertakings, the following should emerge clearly: (a) public funds made available directly by public authorities to the public undertakings concerned; (b) public funds made available by public authorities through the intermediary of public undertakings or financial institutions; (c) the use to which these public funds are actually put (see Articles 1(1) and 3).

The obligation to maintain separate accounts within certain undertakings implies the costs and revenues associated with different activities, and full details of the methods by which costs and revenues are assigned or allocated to different activities emerge clearly (see Articles 1(2) and 3a).

Is required to maintain separate accounts any undertaking that enjoys a special or exclusive right granted by a Member State pursuant to Article 86(1) or are entrusted with the operation of a service of a general economic interest pursuant to Article 86(2) and receive State aid in any form whatsoever, including any grant, support or compensation, in relation to such service and which carries on other activities (see Article 2(1)(d) and recital 7). Thus, for undertakings whose activities are limited to the provision of services of general economic interest and which do not operate activities outside the scope of these services of general economic interest, the obligation of separation of accounts does not apply. This is based on the consideration that it is in principle not deemed necessary to require separation of accounts within the area of services of general economic interest or within the area of the special or exclusive rights, as far as this is not necessary for the cost and revenue allocation between these services and products and those outside of the services of general economic interest or the special or exclusive rights.

Furthermore, in cases where the compensation for the fulfilment of services of general economic interest has been fixed for an appropriate period following an open, transparent and non-discriminatory procedure it does not seem necessary at this time to require such undertakings to maintain separate accounts (see Article 4(2)(c) and recital 11)

Finally, the directive does not require transparency of financial relations and/or impose the obligation to maintain separate accounts in connection to undertakings with a total annual turnover of less than EUR 40 million to maintain separate accounts (see Articles 4(1)(d) and 4(2)(b) and recital 10) and in connection to services the supply of which is not liable to affect trade between Member States to an appreciable extent (see Articles 4(1)(a) and 4(2)(a) and recital 10.

It would therefore seem to be a requirement that the costs associated with the provision of water and wastewater services need to be clearly separated from municipal budgets if the service provision has been delegated or assigned to a separate entity. This is even the case if the entity is owned by a municipality or any other form of public authority. In addition where there are cross subsidies between different activities of undertakings operating a service of general economic interest there must also be transparency and the provision of adequate information on the separation of accounts. This directive would not apply, however, if water and wastewater services were not liable to affect trade between Member States to an appreciable extent.

If applicable, the terms of this Directive could be used as a basis for reporting more information about the financial performance of the utilities (see chapter 6).

[4] Commission Directive 80/723/EEC on the transparency of financial relations between Member States and public undertakings as well as on financial transparency with certain undertakings, as amended by Directive 2000/52/EC of 26 July 2000, OJ L 193, 29.7.2000, p. 75.

2.3.2. The Internal Market Rules

Activities in the water sector, generally falling within State's responsibility, may be subject to exclusive or special rights. The way in which these exclusive or special rights are granted to third parties, as a result of acts of State, is subject, however, to the rules of the EC Treaty on the Internal Market (and principles derived thereof) and, in some cases, to secondary legislation, in particular on public procurement. The Internal Market rules, however, do not impose an obligation on public authorities to entrust the provision of water services to a third party. They may obviously decide to ensure the provision of those services entirely through they own services. But if the entrust a third party with the task, the choice of the third party is subject to prior call for competition.

The Commission adopted an Interpretative Communication on Concessions under Community Law[5] aiming at clarifying the applicability of the EC Treaty rules on Internal Market (and the principles derived thereof) to the behaviour of public authorities when they grant "service concessions"[6].

Scope of the Interpretative Communication

By "Concessions", the Commission understands "acts attributable to the State whereby a public authority entrusts a third party – by means of a contractual act or a unilateral act with the prior consent of the third party – the total or partial management of services for which that authority would normally be responsible and for which the third party assumes the risk." Such services are covered by this interpretation to the extent that they constitute economic activities.

The relevant rules on Internal Market are essentially the EC Treaty rules on: free movement of goods (Articles 23-31), freedom of establishment (Articles 43-48), freedom to provide services (Articles 49-55), free movement of capitals (Articles 56-60) and prohibition of discrimination on the basis of nationality (Article 12).

The principles that emerge from the Court of Justice case law are the principles of non-discrimination, equality of treatment, transparency, mutual recognition and proportionality.

Outsourcing of water or wastewater services may, however, be subject to the EC secondary legislation on the opening up of public procurement to the extent that outsourcing concerns public "services contracts" rather than "services concessions". If a public service contract is involved, the rules of Directives 92/50/EEC[7] or 93/38/EEC[8] may apply, depending on the particular powers of the public entity. The criterion for the distinction between "service contract" and "service concession" is the exploitation risk. There is a service concession when the operator bears the risk involved in operating the service in question obtaining a significant part of revenue from the user, particularly by charging fees in any form. Service concessions are also characterised by a transfer of the responsibility of exploitation.

In addition, Directive 93/38/EEC (the so-called utilities directive) imposes an obligation on entities active in the defined utility sectors, including the water sector, to contract goods, services and works according to the detailed rules contained which based on the principles outlined above.

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5 OJ C 121 of 29.4.2000, p. 2.

6 The Interpretative Communication also describes the specific rules applicable to "Works Concession", which are contained in Directive 93/37 of 14 June 1993 concerning the coordination of procedures for the award of public works contracts, OJ L 199 of 9.8.1993, p. 54. These rules are more detailed than for "service concessions". See this Communication for the distinction between "services" and "works".

7 Council Directive 92/50/EEC of 18 June 1992 relating to the co-ordination of procedures for the award of public service contracts, OJ L 209 of 24.7.1992, p. 1.

8 Council Directive 93/38/EEC on contracts awarded by entities operating in the water, energy, transport and telecommunications sectors, OJ L 199, 9.8.1993, p. 84, as amended in particular by European Parliament and Council Directive 98/4/EC of 16 February 1998, OJ L 101 of 1.4.1998, p. 1. This directive is referred to as the "utilities directive".

Scope of the Utilities Directive

It establishes that public authorities (e.g. a municipality), public companies (e.g. a municipal company) and private companies holding exclusive or special rights (e.g. a concessionaire) which operate in the water sector must respect the procurement rules when awarding contracts.

The definition of the water sector for the purpose of this directive is: the provision or operation of fixed networks intended to provide a service to the public in connection with the production, transport or distribution of drinking water or the supply of drinking water to such networks (see art. 2). The type of contracts that are subject to those rules are: the procurement of goods, services and works of a value higher than a certain threshold (art.4), but the directive does not apply to contracts awarded by the mentioned entities for the purchase of water (art. 9). The supply of drinking water to networks which provide a service to the public by a contracting entity other than a public authority (e.g. a public enterprise or a private enterprise) shall not be considered as a relevant activity (i.e. activity subject to the directive) where the production of drinking water by the entity concerned takes place because its consumption is necessary for carrying out an activity other than that referred to in the article and where the supply to the public network depends only on the entity's own consumption and has not exceeded 30% of the entity's total production of drinking water, having regard to the average for the preceding three years (article 2§5).

In simplified terms, when a water distribution company purchases water, it can do what it wants (subject to the respect of other rules of the Treaty), but if it purchases other goods, services or works (e.g. pipelines, architectural services or contracts works), then it has to follow competitive tendering procedures. The rules of Directive 93/38 apply to "drinking water" only, not to hydraulic engineering projects, irrigation water or land drainage etc. However, if the contract to be awarded by the contracting entity relates to all these activities and drinking water represents 20% of the total water made available by those projects, then the contract is subject to the directive. In addition, the directive shall apply to contracts connected with the disposal or treatment of sewage (article 6§2). Having said that, even in cases where this directive does not apply, the so-called "classic directives" may apply, albeit only to public authorities and public bodies, but not to private entities having exclusive or special rights.

The Commission has proposed some modifications to Directive 93/38[9]. Those modifications are being discussed in the Council and the European Parliament. They have not yet been approved.

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2.4 RELEVANT EUROPEAN COMMUNITY LEGISLATION – RELATING TO WATER AND WASTEWATER

The European Union has had a major impact on the development of policy and legislation in the member states relating to the activities of water and wastewater utilities, particularly relating to water pollution control and the provision of drinking water quality standards. The Water Framework Directive(WFD) is the main piece of legislation that has most recently been enacted. These Directives are largely implemented with the objective to protect the health and the aquatic environment of the EU's citizens and as such are quite distinct from the legislation described in the previous section. The WFD and the range of Directives dealing with specific issues, such as drinking water quality and urban wastewater treatment are briefly described in this section [10].

2.4.1 The Water Framework Directive

The overall purpose of the Water Framework Directive (2000/60/EC) (CEC 2000) which was adopted in September 2000, is to establish a framework for the protection of freshwater, estuaries, coastal waters and groundwater in the EU. The Directive contains very detailed provisions and is expected to form an overarching strategy for the management and protection of water resources, and replaces a number of earlier directives designed for the protective of the aquatic environment.

[9] See proposal for a Directive of the European Parliament and of the Council coordinating the procurement procedures of entities operating in the water, energy and transport sectors; document COM(2002)276, OJ C29E of 30.1.2001, p. 112-188; See also the amended proposal, COM(2002)235, OJ C203E of 27.08.2002, p. 183-209.

[10] For further details, please access the DG Environment website: http://europa.eu.int/comm/dgs/environment/index_en.htm

Before going on to the main technical requirements of the Directive, the important element of the WFD for this study's purposes is the objective to ensure that water pricing policies provide incentives for the efficient use of water resources. Also that they take account of the principle of the recovery of the costs of water services, including environmental and resource costs. In doing so, account must be taken of the economic analysis of the river basin and the polluter pays principle.

By 2010 Member States must ensure:

- That water pricing policies provide adequate incentives for water use efficiency and thereby contribute to the environmental objectives of the Directive
- An adequate contribution of the different water uses, disaggregated into at least industry, households and agriculture, to the recovery of the costs of water services, based on the economic analysis conducted according to Annex 3 of the Directive and taking account of the polluter pays principle

However, Member States do not have to comply with this provision if they can show that established practices do not compromise the purposes and the achievement of the objectives of the Directive. The planned steps towards taking account of the principle of cost recovery must be reported in the River Basin Management Plans, as must the contribution made by the various water uses to the recovery of the costs of water services.

The Directive aims:

- To prevent further deterioration and protects and enhances the status of aquatic ecosystems and, with regard to their water needs, terrestrial ecosystems and wetlands directly depending on aquatic ecosystems;
- To promote sustainable water consumption based on the long-term protection of available water resources;
- To enhance protection and improvement of the aquatic environment inter alia through specific measures for the progressive reduction of discharges, emissions and losses of priority substances and the cessation or phasing-out of discharges, emissions and losses of priority hazardous substances;
- To ensure the progressive reduction of pollution of groundwater and prevents its further pollution; and
- To contribute to mitigating the effects of floods and droughts.

The Directive will thus contribute to:

- The provision of the sufficient supply of good quality surface water and groundwater as needed for sustainable, balanced and equitable water use;
- A significant reduction in pollution of groundwater;
- The protection of territorial and marine waters; and
- Achieving the objectives of relevant international agreements, including those which aim to prevent and eliminate pollution of the marine environment, by Community action under Article 16 cease or phase out discharges, emissions and losses of priority hazardous substances, with the ultimate aim of achieving concentrations in the marine environment near background values for naturally occurring substances and close to zero for man-made synthetic substances.

The Directive requires Member States to identify River Basin Districts (RBDs) and to allocate the individual river basins within their territory to the RBDs. Competent authorities will have to be designated for the RBDs to ensure that the terms of the Directive are met. Groundwater and coastal waters will need to be assigned to the nearest or most appropriate RBD. Where the RBD crosses more than one Member State, the Member States concerned shall designate joint RBDs and are to ensure co-ordination of the programme of measures to achieve the objectives of the Directive. Existing structures may be used for the co-ordination.

Member States must draw up and implement programmes of measures, which must be included in the River Basin Management Plans to:

- Prevent deterioration of the status of all bodies of surface waters;
- Protect, enhance and restore all bodies of surface water (apart from heavily modified water bodies) with the aim of achieving good surface water status[11] at the latest 15 years after the date of entry into force of the Directive;
- Protect and enhance all artificial and heavily modified bodies of water, with the aim of achieving good ecological potential[12] and good surface water chemical status at the latest 15 years after the date of entry into force of the Directive;
- Implement the necessary measures in accordance with Article 16(1) and 16(6), with the aim of progressively reducing pollution form priority substances and ceasing or phasing out emissions, discharges and losses of priority hazardous substances;
- Prevent or limit the input of pollutants into groundwater and the deterioration of the status of all bodies of groundwater;
- Protect, enhance and restore all bodies of groundwater, ensure a balance between abstraction and recharge of groundwater, with the aim of achieving good groundwater status[13] at the latest 15 years after the date of entry into force of the Directive;
- Reverse any significant and sustained upward trend in the concentration of any pollutant resulting from the impact of human activity in order to progressively reduce pollution of groundwater; and
- Comply with all standards and objectives relating to Protected Areas[14] at the latest 15 years after the date of entry into force of the Directive, unless otherwise specified in the Community legislation under which the individual Protected Areas have been established.

2.4.2 Communication from the Commission on Pricing Policies for enhancing the Sustainability of Water Resources

The introduction and implementation of the Water Framework Directive (WFD) provides the context for this Communication, in which more weight is given to the importance of water charging to act as an incentive for a more sustainable use of water resources and cost recovery in the provision of water services. The Communication presses the need for:

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[11] "Good surface water status" means the status achieved by a surface water body when both its ecological status and its chemical status are at least "good". "Good ecological status" is the status of a body of surface water, so classified in accordance with Annex V of the Directive "Good chemical status" means the chemical status required to meet the environmental objectives for the surface water, established Under Article 4 of the Directive that is the chemical status achieved by a body of water in which concentrations of pollutants do not exceed the environmental quality standards established in Annex XI and under Article 16(5), and under other relevant Community legislation.

[12] "Good ecological potential" is the status of a heavily modified or an artificial body of water, so classified in accordance with the relevant provisions of Annex V of the Directive.

[13] "Good groundwater status" means the status achieved by the groundwater body when both its quantitative status and its chemical status are at least "good". "Good quantitative status" is defined in Table 2.1.2 of Annex V of the Directive "Good chemical status" is the chemical status of a body of groundwater, which meets all the conditions set out in Table 2.3.2 of Annex V of the Directive

[14] "Protected Area" means an area which has been designated as requiring special protection under specific Community, national or local legislation for the protection of water or for the conservation of habitats and species, including all those areas listed in Annex IV of the Directive.

- firmer application of the principle of cost recovery with better targeting based on cost and benefits of water use
- wider application of pricing structures to provide incentives for water use efficiencies, in particular metering
- a more open policy of water pricing that accounts for environmental costs and to support sustainable demand-based policies

The Communication covers all aspects of water pricing and uses but is particularly concerned with larger sectors such as agriculture and industry. It also states that pricing is not the only instrument that can be used to resolve water resource problems, including technology improvements, education, information provision, robust ways of managing and controlling abstraction and trading of water rights and permits.

The Communication and the preparation of guidelines for the application of a water pricing strategy under the WFD, seeks to be the beginning of a process that, it is recognised, will mirror the implementation of the WFD and have regard to agriculture changes in the Common Agricultural Policy.

2.4.3 Urban Wastewater Treatment Directive

On 18 March 1991, EU Environment Ministers adopted the Urban (formerly Municipal) Waste Water Treatment Directive (91/271/EEC) (CEC 1991a). The stated aim of the Directive was to avoid pollution of fresh and marine waters. Pollution is defined in terms of obnoxious conditions, reduction of amenity and ecological quality and effect on waters abstracted for public supply. The Directive essentially adopts a 'precautionary' approach by specifying minimum treatment requirements rather than quality objectives to be achieved.

The Directive requires that all communities above a certain size, defined in terms of population equivalents (1 pe - the organic biodegradable load having a five day biological oxygen demand (BOD_5) of 60 g per day) install adequate collection, treatment and disposal systems to cope with the urban waste water they generate. The main provisions of the Directive are summarised below.

1. All agglomerations above 2000 pe (as defined in the Directive) should be provided with collection systems for urban waste water.
2. The 'standard' treatment required for urban waste water entering collection systems is secondary biological treatment or an equivalent process (see Table 5.5).
3. 'Sensitive areas' are to be identified - based mainly on the risk of eutrophication and on exceeding the nitrate standard in the Drinking Water Directive. Discharges from agglomerations of more than 10 000 pe into sensitive areas are to be subject to more stringent treatment than in (2) - see Table 5.5. Sensitive areas were to have been designated by 31 December 1993 and the treatment conditions are to be satisfied by 31 December 1998.
4. 'Less sensitive areas' can be identified in coastal waters. Discharges to less sensitive areas may receive less stringent treatment than in (2), but must be subject to at least primary treatment.

The discharge of industrial waste water into collection systems and urban waste water treatment plants must be subject to such pre-treatment as is required in order to ensure that:

- The health of staff working in collecting systems and treatment plants is protected;
- Collection systems, waste water treatment plants and associated equipment are not damaged;
- The operation of the waste water treatment plant and the treatment of sludge are not impeded;
- Discharges from the treatment plants do not adversely affect the environment, or prevent receiving water from complying with other Community Directives; and
- Sludge can be disposed of safely in an environmentally acceptable manner.

Provisions are also set out for biodegradable industrial waste water which does not enter urban waste water treatment plants before being discharged to receiving waters. By 31 December 1993, each Member State was to have set requirements for discharges from several named industrial sectors (see Table 5.6). These were to have been forwarded to the Commission who will compare the limit values set in the different countries and, if necessary, make proposals for harmonising the values.

In March 1998 the European Commission has issued a Directive (CEC 1998b), amending the Urban Waste Water Treatment Directive. The Directive defines the concentrations of phosphorus and nitrogen that may be discharged to areas subject to eutrophication as annual averages. The need for the amendment was identified following problems with interpretation of Table 2, in the Directive, provided in Annex I of the original Directive. Member States were required to transpose the Directive into national legislation by 30 September 1998.

2.4.4 Drinking Water Directive

The EU Directive relating to the quality of drinking water for human consumption (80/778/EEC) (CEC 1980a) was adopted in 1980 and sets minimum standards for drinking water supplied for human consumption and food manufacture. An amendment to the Directive was introduced in 1998 to update the parameters and introduce new parameters (Directive 98/83/EEC).

Annex I to the Directive lists standards and/or guidelines for 62 parameters. Most of these standards are defined in terms of maximum admissible concentrations (MACs) and minimum required concentration (MRCs), although others are merely assigned guideline status. Member States are required to set standards in national legislation at least as stringent as those in the Directive but have the discretion to apply more stringent values.

The parameters are broken down into six categories. These are:

- organoleptic (e.g. colour, turbidity, taste and odour);
- physico-chemical (e.g. temperature, pH, chlorides and dissolved oxygen);
- substances undesirable in excessive amounts (e.g. nitrates, surfactants, copper, lead and mercury);
- microbiological (total coliforms, faecal coliforms, faecal streptococci);
- minimum required concentration for softened water intended for human consumption (e.g. total hardness).

2.4.5 Dangerous Substances Directive

In 1976 the EU Council of Ministers adopted the Dangerous Substances Directive (76/464/EEC) (CEC 1976a) to control pollution caused by certain dangerous substances discharged to the aquatic environment.

The Directive established two lists of compounds:

- List I dealing with substances regarded as being particularly dangerous because of their toxicity, persistence and bioaccumulation. Pollution by List I substances must be eliminated; and
- List II containing substances which are less dangerous but which nevertheless have a deleterious effect on the aquatic environment. Pollution by List II substances must be reduced.

For List I substances, the Directive stipulates two approaches for control: uniform emission standards (UESs) (also known as limit values) and environmental quality standards (EQSs). Both types of standard are set on a Community level but Member States are given the discretion to select which approach to adopt. Most EU Member States have favoured the UES approach, whereas the UK has adopted the EQS approach. For List II substances, Member States are required to set environmental quality standards (EQSs) developed on a national level.

2.4.6 Specific Product Directives

Most of the legislation discussed here relates to the control of water pollution caused by the discharge of effluents. However, legislation designed to control the manufacture and use of certain products can also lead to a reduction in pollution of the aquatic environment, in particular from diffuse sources. The general aims of these Directives are either to make the product more environmentally acceptable (i.e. the Detergent Directives) or to restrict or prohibit the use of certain substances in product formulations (i.e. Product Marketing Directives).

The main product Directives are:

- The Council Directive on Detergents (73/404/EEC) (CEC 1973a) and its amendments, stipulate the minimum biodegradability that must be achieved by an active ingredient before it can be put on the market;
- The Council Directive on the control of the biodegradability of anionic surfactants (73/405/EEC) (CEC 1973b);
- The Council Directive on the testing of the biodegradability of non-ionic surfactants (82/242/EEC) (CEC 1982b);
- The Council Directive (76/769/EEC) and its amendments on the approximation of the laws, regulations and administrative provisions in Member States relating to restrictions on the marketing and use of certain dangerous substances and preparations (CEC 1976c);
- Council Directive (79/117/EEC) and its amendments prohibiting the placing on the market and use of plant protection products containing certain active ingredients (CEC 1979c);
- Council Directive concerning the placing of plant protection products on the market (91/414/EEC) (CEC 1991c);
- Council and European Parliament Directive concerning the placing of biocidal products on the market (98/8/EC) (CEC 1998b)

Most of these Directives have acted as framework legislation enabling detailed amendments to be introduced covering controls on specific products or substances.

2.5 GENERAL ISSUES REGARDING THE STRUCTURE AND LEGAL REGIMES OF THE EU MEMBER STATES

Short country profiles describing the legal regime and current structure of the water industry in the member countries of the European Union are contained in Annex 1. It must be emphasised that these are overview reports and do not present themselves as in-depth country reviews. For each country report the author prepared a first draft from available public sources. These drafts were sent to country representatives from the EUREAU organisation, and they were invited to comment and to ensure that the report were accurate and comprehensive.

One of the key areas of information that are missing and requires further detailed understanding is the nature and extent in which current EC competition and internal market rules are in fact being applied to practices in the water and wastewater sector. For example how does each country interpret the position of water supply and wastewater treatment as an economic activity, and to what extent should contracts awarded in the sector be subject to Treaty rules. An assessment of the "contestability" by country of contracts in the sector is something worthy of further study.

It is the intention of the country profiles to provide factual descriptions and not to make any judgemental analysis on relative or comparative efficiency, or quality of service in each country.

The structure and legal regimes of the EU member states encompass a large number of different organisational structures, in social, political and economic contexts, which have determined the manner in which the water industry is managed and regulated. The following points summarise some of these issues.

- The provision of water services by local community organisations has been a feature of European social and political life for many centuries. This history has reinforced the cultural, social and political position of local communities or municipality organisations being responsible for water supply and sanitation provision.
- This legacy of a strong historical tradition in the provision of water services marks it out as somewhat different from other network industries such as gas, electricity, telephone and railways. These, in historical terms, are recently developed service responsibilities and are often more regional or national in the manner in which they are provided. However the advent of more sophisticated and technically developed systems for complex urban water and wastewater systems provides more scope for relevant comparisons.
- The legal regimes, which have been developed across Member States concentrate on measures to protect human health, to protect the environment and to provide a framework for the devolving of management responsibilities to municipality or local authority level. Most recent legislation has had the priority to adapt European Commission Directives on the Environmental Protection and Drinking Water Quality into national legislation. All countries have and or will be implementing legislation to transpose the requirements of the Water Framework Directive and to effect is enforcement.
- Water supply and wastewater services to the public are the legal responsibility of municipalities in all EU member countries, except in the UK. Municipalities have the legal ownership of assets for the provision of water supply and wastewater services in all EU member countries, again except in the UK. Differences in the structure of the water industry between these countries reflect the manner in which municipalities discharge these responsibilities, be that as local municipality departments, municipally owned (or partially) owned companies, inter-municipality associations or companies, or through the signing of concession contracts with private or public sector companies to undertake operations. The most extensive reform of water industry structures came in England and Wales successively through the 1974 Local Government Act which took water supply provision and wastewater management responsibility away from local councils, and through the 1989 Water Act which fully privatised the regional water companies as private equity entities.
- Industrial water service and wastewater service provision is not generally provided through public service networks. Issues of the resource protection and receiving water quality protection provide the main basis for legislation affecting industrial use. In most countries industry have their own rights to exploit and use water without recourse to the public networks. In the UK the majority of industrial sites are connected, whilst in Germany and the Netherlands industrial supply from the public networks is around 10%.
- Agricultural users, primarily for irrigation purposes, have in all countries had a long historical of utilising private water sources through riparian rights to groundwater or surface water within their private land. Legal regulations exist to protect water resources from over-abstraction and from contamination. Agricultural use, planning and exploitation are a major feature of the Water Framework Directive.
- All countries have a requirement to implement EC norms relating to a universal service provision of good quality water to all consumers and to ensure protection of the resources to ensure the sustainability of water use by consumers. Rather than regarding the provision of water services as and economic activity subject to EC rules which govern the competition principles, some countries have argued that drinking water and wastewater services remain a exclusively public service function, therefore exempt from these rules.
- In most member states the operation and management of water abstraction from the natural environment, its treatment and delivery through distribution systems to customers, rests with a single vertically structured organisation, such as the local municipalities and or with organisations

owned by groups of municipalities. Most countries nevertheless have in place legislation that permit the owners of the water and sanitation assets to contract or out source specific operations to third parties.

- In terms of the use of water resources, there are significant differences between Mediterranean countries and the others. For most central and northern European countries, the public water supply to domestic consumers and industry is the major user, whilst in southern Europe, it is agriculture and irrigation users.
- Water supply services remain characterised by monopolistic structures and the possibilities for "opening up" the national water supply water services to competition remain largely undeveloped across Europe. Water supply and wastewater services to the public are the legal responsibility of municipalities in all EU member states, except in the UK. Municipalities have the legal ownership of assets for the provision of water supply and wastewater services in all EU member states, again except in the UK, although there are some very local exceptions to this general rule. To this end the operation of water and wastewater networks appears to have particular economic and political governance characteristics that has placed the provision of its services in the forefront of municipal government responsibilities.
- Water supply and distribution infrastructure systems generally operate as "natural monopolies". For reasons of cost, parallel water networks are not efficient, which is the reason why parallel infrastructures (also the case with gas and electricity supplies) have not been established for water supply or sewerage services. In addition, the substitution of drinking water provided from networks, e.g. through bottled water is only possible to a very limited extent also due to high economic and environmental costs. A limited degree of competition, particularly in rural and isolated areas, can be achieved through self supply; a form of off-network competition.

The following table provides a country by country summary of some of the key issues relevant to this study. Reference should also be made to the country reports contained in Annex 1.

Country Report Summary of Key Issues

	Legislation Responsibility for Water and Sanitation Services	Service Provision Responsibility	Provision of the Operational Services	Participation of Private Investors	Outsourcing, delegating or assigning the Services	Financing of the Service (Tariff Systems)
1. Austria	Central Government	Municipalities	Municipality Companies	Capital investment projects	Outsourcing for specific services	Fixed/volumetric. Set by municipality.
2. Belgium	Central Government	Regional Governments and Municipalities	Municipality owned Companies	Capital Investment projects such as BOT for Brussels WWT and minority equity partners in regional companies.	Outsourcing for specific activities done by responsible authority under contract	Fixed/volumetric for drinking water. Set by municipality but with approval of Ministry of Economics. Wastewater financed through regional taxes.
3. Denmark	Central Government	Municipalities	Municipality Companies (ie water and wastewater)	Usually for small rural service providers	Responsibility of municipality to delegate or outsource functions.	Fixed/volumetric charge. Municipalities approve tariffs for water a wastewater.
4. Finland	Central Government	Municipalities	Municipality Companies	No	Outsourcing and contracting out of specific services takes place.	Fixed/volumetric charge set by municipalities. Wastewater fee is directly linked to water use.
5. France	Central Government	Municipalities	A mix of mainly private Operating Companies (2 in particular) and municipalities	Operations undertaken by private companies for about 60% of municipalities – mainly AFFERMAGE contracts	Operational activities and risks can be delegated to third party entities. Outsourcing activities contracted by operating entities, either private or public	Volumetric charges to service operators. Set within framework of contract between operator and municipality. Wastewater charges to municipalities.
6. Germany	Central Government and Regional Governments (Länder)	Municipalities	Municipalities (85%, but 48% of population) or by companies with majority municipality shareholding (15% but 52% of population)	Possibilities for equity investment in municipality owned companies and in capital investment contracting schemes	Outsourcing of specific services	Cost recovery principle used. Fixed/volumetric charge, which is defined by municipalities under rules set in law
7. Greece	Central Government	Municipalities	Municipalities or Municipality shareholding companies	Capital investment projects	Specific services are outsourced and contracted to other parties.	Volumetric charges for large users. For municipal companies costs are raised through local taxes
8. Ireland	Central Government	Municipalities	City and county Councils	Capital investment projects – DBOs for wastewater treatment in Cork, Dublin & Limerick. Group Water Schemes – usually covering small rural areas	Outsourcing of some specific functions to other operators like AWG	No charges made to domestic users. Large users are metered.

Country Report Summary of Key Issues

9. Italy	Central Government	Municipalities	A mixture of Municipality/Private shareholding companies	Investors in municipality companies and on a concession operation basis	Outsourcing and contracting out of specific activities, particularly in capital investment projects	New regulations mean that prices will be on the basis of full cost recovery. Implementation is patchy. Still significant subsidies from municipal budget. Tariffs in general based on volumetric charges
10. Luxembourg	Central Government	Municipalities	Municipalities	No	No	Tariffs set by local communes
11. Netherlands	Central Government	Municipalities	Municipality (owned or majority publicly owned companies	Investors in municipalities owned companies, but by law not able to take majority holdings. BOT/DBO contracts permitted, such as WWT for The Hague.	Outsourcing of specific services or function permited.	Fixed and volumetric charges, set by municpality companies
12. Portugal	Central Government	Municipalities	Municipality owned or majority owned Companies	Investors in municipality companies operating concessions	Outsourcing of specific services and delegation of services to concessionaire entities	Set by municipalities and tariffs agreed with operators. Fixed/volumetric where metered
13. Spain	Central Government	Municipalities	Municipalities or municipality/private Companies	Investors in municipality companies operating concessions	Outsourcing the responsibility of municipalities	Tariffs set by municipalities to cover operational costs.
14. Sweden	Central Government	Municipalities	Municipality Companies	No	Responsibility of the municipality companies to decide. Specific functions are outsourced through Procurement Rules	Fixed/volumetric rates. Tariffs and the manner of financing decided by municipality.
15. United Kingdom • **England & Wales**	Central Government	Private Companies under licence from Government	Private Companies	Full privatisation with 100% private equity structures	Outsourcing of some individual functions.	Generally flat rate charges for domestic. Volumetric for large users. Price Caps set by national Regulator – OFWAT
• **Scotland and Northern Ireland**	Central Government	Regional Assemblies and Executives	Independent publicly owned Companies	Capital investment projects – BOTs	Some outsourcing of specific functions	Flat rate, through local taxation for domestic. Volumetric for most large users. *Scotland* – Prices set by Assembly following recommendation from Regulator (WIC). *Northern Ireland* – set by Assembly.

3. ECONOMIC ASPECTS OF THE WATER INDUSTRY

3.1 GENERAL

For domestic consumers the water industry has a crucial social, political and economic requirement to provide safe water for drinking and washing, and the safe release of wastewater to the environment. The economic imperative for the industry for these consumers is to meet these requirements in the most efficient manner possible for the society and thereby create wider economic benefits.

Water is also supplied to industrial and agricultural users and quality requirements must also be respected when industrial and agricultural consumers receive water services from the water industry. In this report agricultural users are not considered in any depth.

The water industry does not fit easily into standard economic theory with regard to market competition. There are significant externalities (social costs and benefits) and many parts of the industry are widely viewed as natural monopolies. There are significant sunk costs in the infrastructure and, since water is a "heavy" product, considerable transportation costs.

Following a review of the main technical characteristics of the water industry in the previous chapter, this chapter aims to provide an overview of the economic characteristics of the water industry.

The use of the term *"water industry"* may be disconcerting to some readers. The reason the term is used in this study is that by doing so a distinction can be made between the broader sector issues and the entities that provide the services. The term is also relevant in the context of an examination of the applicability of EU competition policy whereon for the purpose of this examination, an assumption is being made that the service providers in the sector operate in an *"economic activity"*.

3.2 WATER RESOURCES MANAGEMENT

Over the last couple of decades the European Commission, as with a number of the world's water industry bodies, has changed the way in which it thinks about water resources and the provision of safe water. Along with a water global consensus on the imperative need to enact better legislation and practices to protect the aquatic environment and the need to manage water as a sustainable resource for society, water management is more frequently being considered in an economic context. The European Environment Agency defines the tasks of water management thus:

"To promote sustainable use of water resources – use which meets the needs of the present without compromising the ability of future generations to meet their own needs"

The major users of European water resources are the public water supply, industry and agriculture. This report will essentially focus on the supply of drinking water to public distribution networks, the collection and treatment of wastewater and the supply of water for industry. The supply of water for agriculture production will only be dealt with marginally.

In most European countries, the amount of water available is much greater than that used and most of that abstracted is eventually returned to the natural water cycle. However, water is typically returned at different points from that at which it is abstracted.

In recent years European countries have been vulnerable to low rainfalls resulting in droughts and therefore lower water availability in rivers and reservoirs, and worsened water quality. In particular in Southern European countries are susceptible to drought conditions that can be a major environmental, social and economic problem. Droughts have an important economic impact on parts of Europe in

relation to water supply shortages and quality deterioration, crop and live stock losses and concentrations freshwater pollution. Extended drought conditions have contributed to increases in desertification mainly in parts of those Mediterranean Countries.

Flooding is also a major problem for parts of Europe and in economic terms flooding is the most costly of water management crises in Europe. Demographic changes have resulted in increase utilisation of flood plains and have highlighted the importance of managing water resources with regard to future economic and social impacts.

Water resource preservation and sustainable management for rivers, lakes, groundwater, are recognised by European countries as being of vital national (and European) economic interest. This acknowledges that "damage" to water resources through their non availability due to scarcity or pollution, or through uncoordinated management causing flooding, will have broader economic consequences for European societies at large. Thus the EC and its member states have successively over many years implemented European Union wide and national measures to ensure a sustainable water management process, an important outcome of which is the Water Framework Directive. The economic aspects of water management covered by the Directive includes; that environmental and resource cost must be integrated, that all users should contribute to costs, and the principle of cost recovery.

3.3 SOCIAL COST AND BENEFITS OF THE WATER INDUSTRY

The water industry (the service providers) is a "public health" industry, in particular when supplying domestic consumers. A reliable supply of clean drinking water and provision of an extensive and reliable sanitation system is essential to avoid the spread of serious diseases, which can arise from contaminated water or the lack of access to safe water. A high quality and sufficient quantity of clean water supplies are fundamental to a robust European wide and national public health policy."

Any economic understanding of the water industry must recognise that the efforts by European Union member states over many decades to improve water and sanitation infrastructure and service has brought benefits. These can be quantified in terms of reduced costs to those who would have suffered from water related diseases and in the public health / medical system, industry and society in general.

In this sense the water industry has been the provider of a "social good" over many decades. One definition of this characteristic of "social good" is that the widespread availability of clean and affordable water supply and sanitation services is necessary and improves the economic position of the individual and of the society's well being. Ensuring this requires some government action to ensure the sustainability of this social good, by virtue of its importance to the process of economic growth. "Social Good" are included in those goals, which have value to more than one person. In economic terms *water* consumed or used, or the individual act of the sanitary disposal is a private good. Whilst the supply and sanitation *systems* provided to allow this use are a public good, because they are provided for many users. In the words of the International Conference on Water and Environment in January 1992;

"Water has an economic value in all its competing users and should be recognised as an economic good"

The questions raised by this statement have been much discussed by economists. One of the main points about water services is that there are always competing uses for water from groups (or stakeholders) such as the public, industry and agriculture. An allocation of these competing uses will be made in a manner that maximises the "net benefit" from a defined amount of water. The wider social benefit can be incorporated into this equation and these allocations inevitably involve local or national government participation, through licensing processes or market processes and oversight or

regulation. Rarely is the whole of the supply of water or sanitation services treated as a market commodity as this has the potential to ultimately cause poorer sections of society to be unable to pay for the costs associated with the provision of these services. Although, the provision of other social essentials are generally treated as commodities, so why not also water services? The widespread desire to ensure universal water supply and sanitation across the European Union member states as embodied in their legislation is testament to this. As well as the social and health benefits, EU member states also recognise that ecological benefit and costs cannot be precisely quantified in economic terms and the Water Framework Directive states;

"Water is not a commercial product like any other but, rather, a heritage which must be protected, defended and treated as such".[15]

It seems that this statement refers to the ecological value of bulk water supply and water in the environment, rather than a judgement on the services involved in providing drinking water delivered to consumers at home at a constant pressure 24 hours/day all year round. In this activity it is not hard to envisage commercial activities and an economic value to these activities.

The recognition of the social and economic importance of the provision of water and sanitation services to all users; and the sustainability of water resources management have led most Governments in Europe to favour a "business-like" approach to the provision of all water and sanitation services. Frequently the over riding concern on water services solely as a "social good" has meant that services have been provided at subsidised prices or for free, thereby increasing the potential for wasteful use and providing no incentives to ensure efficient water use and re-use.

The entities largely responsible for the adoption of this more business-like approach, has been the water industry, irrespective of their public or private status. Faced with significant and increasing capital investment costs to meet increasingly stringent health and ecological protection requirements and subsequently increasing operation costs, the financial burden of the industry and to public sector and users has been increasing. Recent reform processes in a number of EU countries have been undertaken with the objective to stimulate increasing efficiencies in the water industry, using policy instruments such as regionalisation, privatisation, corporatisation and incentive based price regulation.

3.4 ECONOMIC CHARACTERISTICS OF THE WATER INDUSTRY

This section outlines the specific characteristics of water industry economics.

3.4.1 Vertical and horizontal integration

Water management is naturally structured as a vertical chain. The activities of water abstraction, treatment, distribution, wastewater collection, wastewater treatment and disposal all follow on naturally from each other. However, the fact that there is a natural vertical chain does not mean that the activities cannot be separated. Indeed from an economic and managerial point of view they can be separated. In many European countries bulk water abstraction and supply is provided by regional entities and distribution functions are undertaken by individual municipalities or local entities. Even where vertically integrated companies exist they tend to organise themselves into infrastructure management, production and customer service functions, such as in the UK, Spain, France and in the reformed parts of Italy.

The process of vertical unbundling of companies and or market contestability at different elements of the vertical chain, is a process that has also been experienced in the last decades in other natural

[15] Directive 2000/60/EC OJ L 327/1. S.1.

resources industries where distribution networks are important and which were vertically organised, such as the gas and electricity industry, but also the oil industry.

The theoretical benefits of separating these activities are that they can be provided by different entities in a competitive environment. This may take the form of sub-contracting the operation (or franchising) and or maintenance of the assets or outsourcing of certain operational functions or competitive bidding to a third party, for example for capital investment. In this sense competition and competitive influences can be embraced by the water industry.

The particular difficulty could lie in the separation of production from distribution, particularly in times of water shortage (in Belgium this seems to have been resolved). Though it is possible to envisage contractual relationships between bulk suppliers and distribution entities to resolve this. In such times, the network is managed such that water from areas of surplus can be diverted to areas of shortage. This may impact on the production arrangements in that the outputs at various supply points might have to be adjusted.

The theoretical benefits of separating these activities are that they can be provided by different entities in a competitive environment. This may take the form of sub-contracting the operation (or franchising) and or maintenance of the assets or outsourcing of certain operational functions or competitive bidding to a third party, for example for capital investment. In this sense competition and competitive influences can be embraced by the water industry. This process is similar to the ones already followed by other vertically organised industries that involve the management of natural resources and where distribution networks are extremely important, such as the electricity, natural gas or oil industries.

Horizontal integration on a multi-utility basis and regionalisation has occurred in many countries, in the UK, Netherlands and Italy, in order to concentrate expertise and responsibility and to effect savings from economies of scale. Economies of scale can be gained from the administrative, engineering and operational functions of the undertaker. Other benefits of wider regionalisation include the reduced risk of water shortage since water in areas of surplus can be routed to areas of shortage within the same regional control without needing to overcome administrative or financial barriers. Also there is evidence of some large energy utilities taking a greater interest in the water sector, examples include; Suez is present in water (Ondeo) and gas/electricity (Tractebel, Electrabel, Distrigaz); RWE and E.On have bought water utilities; EdF has taken a stake in Vivendi Environnement.

3.4.2 Capital provision

The water industry is a very capital intensive industry, with a high proportion of the fixed assets, in particular water and sewerage pipes, and in some cases water and wastewater treatment plants, having very long lives (up to 100 years, and often more). Significant investment is required to provide and maintain the essential infrastructure of the industry: underground pipe networks, water and sewage treatment plants, reservoirs, etc. As such, there are large fixed costs, which are “sunk costs” since the assets have no alternative use. Therefore, the costs of operation can be only a small proportion of overall costs.

Owing to the economic characteristics of networks, it is this part of the supply chain that most lends itself to a natural monopoly. Infrastructure costs are sunk and transportation costs are high. The figure below shows the transportation add-on costs of water, electricity and gas as a percentage of bulk costs. Although the same numbers will not apply in every situation, they are indicative of margin of difference involved. It is worth considering that other cost comparisons between these utilities, such as storage, may present a different picture; one which shows water storage as relatively cheap in comparison to these other utilities.

The following table produced by Ofwat, the England and Wales water industry regulator, compares the indicative add-on costs for water, gas and electricity for the UK.

Indicative add-on Transport Costs			
	Electricity	**Gas**	**Water**
	P/kWh (400KV)	**P/therm (24" pipe)**	**P/m^3 (36" pipe)**
Bulk cost (excluding transport)	3.0	20	30
Transport cost per 100km in	0.15	0.5	15
Transport add-on per 100km	**5%**	**2.5%**	**50%**

Figures in UK £sterling, pence.
Source: Office of Water Services, UK.

In recent years, quality standards have been tightened for both drinking water quality and the quality of material released to the environment. This has exacerbated the situation described above since in some European countries large increases in capital expenditure are required in order to meet these standards. Innovative means of funding have been explored, including the following:

- Contracts to private sector companies to undertake water service operation and investments - companies take over responsibility for water supply and or wastewater services and funding is made available from capital markets. This may be on a concession basis, where there is a finite time period involved before the contract is re-tendered.

- Selective Private Sector Participation, where private companies take over specific aspects of the water industry, such as a treatment works. Included in this category are, for example, BOOT schemes (Build, Own, Operate, Transfer), where the operation and ownership has a finite period after which assets are transferred back to the original undertaker. There are a number of variations on this theme, such as BOT (Build, Operate, Transfer but not ownership) and BOO (Build, Own, Operate but assets are not transferred – they remain in the ownership of the contractor). The contract may additionally involve aspects of the design of the capital works. Revenue risk is minimised since the contractor is paid on the basis of a fee by the utility and there is no direct link between individual consumers and the contractor.

- Contracting out capital projects to engineering and construction companies on a competitive bidding basis[16]. This is widespread in the industry since specialist construction companies have the capacity, resources and expertise to realise significant economies of scale. Strategic partnering and alliances are also being created where the construction companies also take over the project management of the capital schemes, often entering into agreements with the utilities regarding the total value of the portfolio of projects to be undertaken.

- Companies fully or partially owned by municipalities or public corporations have been established in many European countries and these are able to raise new finance outside of the public fiscal budgets and at the same time benefit from lower debt cost. Capital markets are supplemented by public financing institutions, such as the European Investment Bank at a European level and the European Commission which is directly funding projects through Cohesion and Structural funds.

[16] When utilities decide to contract out this kind of project, they may be subject to the requirements of the EC directives on public procurement

3.4.3 Cost recovery

Historically, in most countries, the costs of water and wastewater services have been subsidised by governments. The reasons for this is that there are clear social benefits of having clean water supply and adequate sanitation. As a result, people become free to concentrate on fruitful economic activity and the general economic environment becomes more prosperous. As a consequence of this prosperity, governments tend to be able to move towards full cost recovery, but this movement has traditionally been slow. Many customers regard clean water and good sanitation as a basic human right that should be provided at minimal cost to them. In this sense the economic arguments for cost recovery and the extent of this cost recovery become entwined with national and local political arguments.

In particular this situation has resulted in difficulties in charging adequate amounts to cover essential capital investment costs, which have in many cases been provided through national or regional administrative bodies (or EC grant funds) rather than the individual utility entity outside the cost to the user.

Having said all of this it does seem to be the intention of Member States to move towards a greater degree of cost recovery and this is embodied in the adoption and implementation of the Water Framework Directive described in Section 2.4.1

3.4.4 Cost allocation

Cost allocation is an important issue in a network industry such as water. For example, should users at the "start" of the network pay the same amount as users at the "end" of the network? This is particularly relevant in the water industry due to the large transportation costs.

In most situations, costs are "averaged" over the whole network so that, for example, rural customers can pay equivalent amounts to urban customers. The degree of averaging depends on the specific horizontal integration of the industry and whether utilities employ different tariffs for different areas: tariffs could be averaged across the town, catchment area or whole country.

A particular feature of the water industry is that water is important for public health. As a result and similarly to the situation in other industries involving services of general interest such as postal services, electricity or telecommunications, water utilities are often obliged to supply customers even where it is not economically profitable to do so. Therefore, the compensation for the cost that arises from public service obligations on water utilities is an issue that has to be solved when allocating costs. Though often these costs have been lost in cross subsidies.

Another aspect of cost allocation is the split between fixed and variable costs. Fixed costs include the cost of asset provision and maintenance whilst variable costs include the cost of chemicals, labour and power. Fixed costs are large in the water industry and are sometimes covered by the standing charge or baseline tariff. Variable costs are covered by volumetric charges per quantity consumed. In situations of rising demand, the question of how to allocate the costs of capacity extensions becomes important.

3.4.5 Market Liquidity

This is defined as a function of the number of customers and number of sellers or providers. In Europe the water industry market has a very large number of customers, possibility counted as the whole of the European population and its companies and institutions.

However, all of these customers (with the exception of the large number of industrial customers which have their own water supply and are not connected to networks), have a one to one relationship with their water service provider as a customer and a seller. This is based on a geographic monopoly. In

addition the number of entities providing water and sanitation services (or sellers) across Europe numbers nearly 50,000, probably the largest number of "sellers" of any industry of the same product and service.

The non-liquidity in the current structure of the water and sanitation services "market" arises from the localised nature in which water resources are abstracted (and regulated) and then distributed to users.

However, across Europe between the many localised (from a municipal to regional and catchment level) systems are very significant differences. These include differences between areas prone to severe droughts to areas with plentiful water resources; from high to low treatment requirements; from areas of high to low public health and ecological standards and regulation; varying balances between public supply and agriculture demands.

3.4.6 Monopoly position and implications for efficiency

In a competitive market structure companies have an overwhelming incentive to achieve maximum overall efficiency in order to maintain strong profits and deliver a value for money product or services that customers choose to buy from a range of choices. A monopoly business has no such incentive, and this could lead to higher prices for users that would otherwise be expected in a competitive structure. In addition a monopoly business, of its own accord is less likely to invest in new technology on services to maintain long term efficiency.

Other structures can assist in providing incentives for a monopoly utility like the water industry to concentrate on improving or maximising its efficiency. Within the Member States principles and structures that have been adopted in some countries include:

- Tariff or economic regulation
- Transparency in operations and open benchmarking and reporting to customers
- Competitive bidding for the contracting out of operations and capital investment projects to third party organisations – an obligation arising from compliance with EC directives on public procurement.
- Corporatisation of the utility entities to instigate a business orientated culture and provide the possibility for utilities to raise finance more efficiently, through the public and or private sector
- Complete or partial privatisation (equity share) in the sector

3.5 WATER PRICES

Water prices between countries and often regions are very difficult to compare. Prices are complex as they often include a matter of specific taxes and subsidies (for example, in most countries VAT is charged on water services, but in some instances, VAT is not charged). It is also the case that water prices are often either lower than costs (so subsidies from the general budget fed by taxes are necessary in order to balance the accounts of the water service) or higher (having the effect to convert the water service into a revenue raising monopoly). In both cases, cross-subsidies issues might appear.

Also caution must be used when comparing prices in countries and regions which are meeting high quality of service standards with modern and well-managed assets and those countries which do not meet EU quality standards and have poor performing assets resulting from low investment. In addition a number of countries have received large grants from Cohesion and Structural funds for capital investment, and as grants, these investment costs have not been reflected in prices to consumers.

One particular feature of the water economics and pricing is that in water industry the increase of *per capita* consumption is not encouraged, but rather the contrary. Environmental policy, largely supported by public authorities throughout Europe, encourages water savings at all levels. Therefore, in water industry, the impact of competitive forces, which may provide better service and/or diminish prices in the long run (provided that the comparison takes into consideration the existing public subsidies to the functioning of the services), will not necessarily imply that customers will increase consumption. In this sense, water industry is different from postal services or telecommunications, where customers might be willing to increase the use of the service if prices diminish, although similar issues arise in relation to energy consumption (concerns about global warning etc.).

The cost structures and allocations in the water industry between the different countries and frequently between municipalities will also differ. This makes proper comparison also fraught with uncertainties. Details of individual country tariff mechanisms are, where available, included in the country reports of chapter 2.

Comparative information up dating the figure providing price indicators for major cities in Europe is provided below.

Water prices in European cities 1995-1998 (Euro)

						Recent % increase (at country level)
Country	**City**	**1995**	**1996**	**1997**	**1998**	
Austria	Vienna	271	278		267	
Belgium	Brussels	307	287		273	2.7 (1988-98)
Denmark	Copenhagen	203	213		306	6.3 (1984-95)
Finland	Helsinki	174	135		136	3.8 (1982-98)
Germany	Berlin				350	3.8 (1992-97)
Ireland	Dublin					
Luxembourg	Luxembourg	264	260		288	6.0 (1990-94)
Netherlands	The Hague	242	190		344	4.6 (1990-98)
Sweden	Stockholm	125	137		138	1.9 (1991-98)
United Kingdom (E&W)	London	140	125		198	
France	Paris	144	148		156	7.0 (991-96)
Greece	Athens	163			155	2.2 (1990-95)
Portugal	Lisbon	57	157		174	
Spain	Madrid	125	135		146	
Italy	Rome	40	52		50	2.0 (1992-98)

Notes:

Germany: Average charge in 1996 in former GDR 1.88 EUR/m^3 and former FRG 1.54 EUR/m^3.

Source: OECD, 1998,1999

The tariff structure within the member states is not easily comparable and there can be significant differences between the make up of tariffs. The UK stands out as being the only country of the member

states which does not raise well over half the cost of domestic water supplies by charging according to volume. Also as mentioned above VAT is charged on tariffs in some countries.

The types of tariff in operation include elements of flat rate and volumetric-based charges.

A flat rate tariff is one where the charge is unaffected by the amount of water consumed (in the UK, the domestic charge is based on the sale value of the house).

A uniform volumetric tariff is one where the charge is based of the same rate for all units of water used.

A two-part tariff (most often used in Europe) is made up of a flat rate charge and a volumetric charge based on a uniform volumetric rate. Sometimes a lower, or zero, rate is applied to the first "block" of amount of water used.

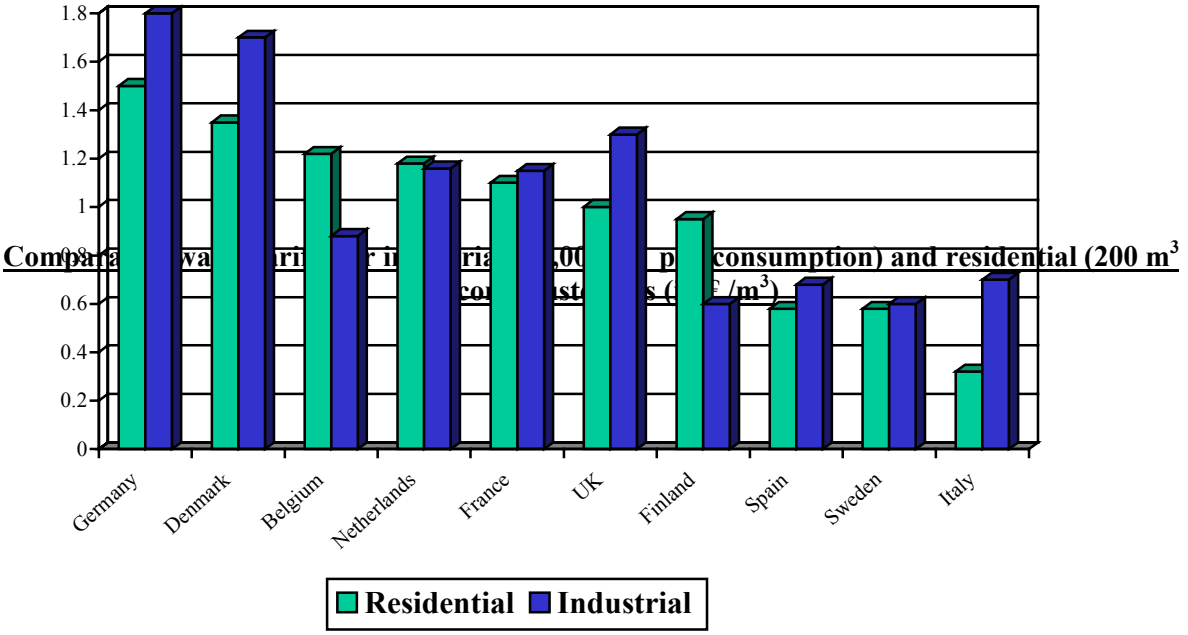
"Block" tariffs are applied in some countries (such as Italy, Spain). They include:

- Rising block tariffs – where successive "blocks" of volume of water are charged at higher rates
- Declining block tariffs – where successive "blocks" of volume of water are charged at lower rates.

A seasonal component can be integrated with volumetric charges on a time-based component, and this has been done in some instances for large use customers. The seasonal issue could be particularly relevant for tourist sites where the impact of seasonal population moves is high. The seasonal increase of population forces the water distribution systems to be over dimensioned while at the same time the consumption is not equally distributed along the year. This leads to the creation of spare capacity during part of the year, in particular in connection with water treatment and water sewage.

Abstraction charges for industrial users exist in Belgium, the Netherlands, Spain and the UK for instance. No abstraction charges exist in Sweden where water is abundant. As mentioned earlier many industrial users invest in their own supplies and sometimes will pay direct abstraction and discharge charges or fees, rather than connect to the public system. This independence may also be driven by their desire to take more control of the quality and quantity of water used. Also in some countries, Finland, France and Germany, industrial payments are confidential through contracts with water suppliers.

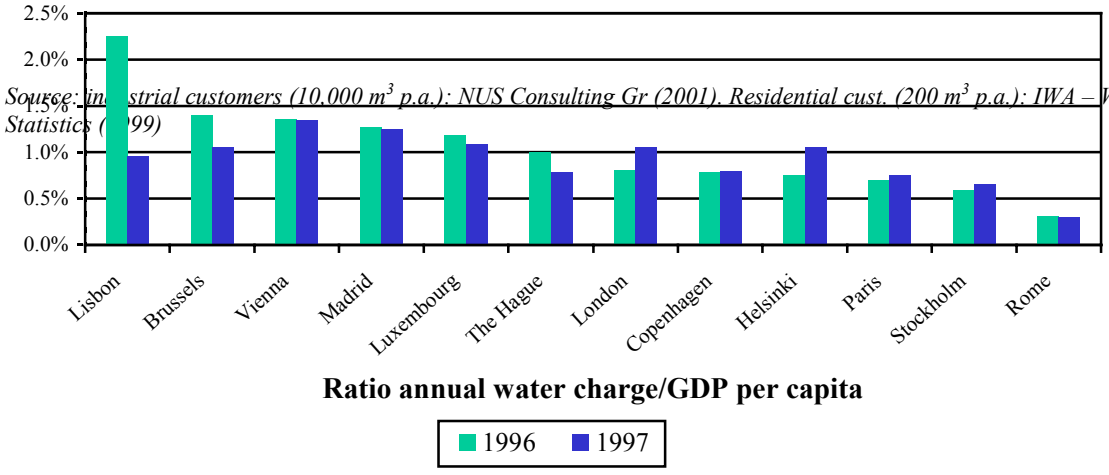
Agricultural use is primarily for irrigation purposes and prices or tariffs for irrigation are frequently subsidised to meet economic and social development objectives in rural areas. Agricultural pricing policies differ widely across Europe, though generally they will distinguish between charges for water resources and charges to cover the cost of supply. More details on pricing structures for irrigation can be found in the European Environment Agency report – "Sustainable water use in Europe: Part 2 Demand Management" prepared by the European Topic Centre for Water in 2001. This report indicates that there is conflicting evidence as to whether efficiencies are influenced by water prices for agriculture, as there is a wider issue of subsidies in the sector.



Comparative water charges for industrial (10,000 m³ p.a. consumption) and residential (200 m³ consumption) customers (€/m³)

Source: industrial customers (10,000 m³ p.a.): NUS Consulting Gr (2001). Residential cust. (200 m³ p.a.): IWA – Water Statistics (1999)

Annual water charges in European cities in relation to GDP per capita



Source: IWSA Congress (1997). In EEA (1999)

4. SCOPE FOR COMPETITION IN THE WATER INDUSTRY

4.1 INTRODUCTION

This section seeks to identify a number of possible concepts for opening up water markets for competition. It does not seek to make judgements for a recommended way forward but does aim to clarify certain principles and implications of these possible options.

Economic theory suggests that there are three main benefits to be gained from competition. First competition ensures companies to be technically efficient in order that they produce goods and services at the lowest possible cost, and that market prices are driven down towards the level of costs. Customers benefit because they get access to goods and services at lower prices. Secondly, competition and consumer choice, bring about an efficient allocation of resources in the economy, such as labour and capital. Thirdly, competition and its pressures encourage companies to innovate and develop improved products and processes, thereby improving dynamic efficiency.

These benefits are regarded as the key to sustainable growth and improved living standards.

Competition is not the end in itself; competition can be a way of ensuring continuous improvements in efficiency that will ensure the water utilities do not abuse a monopoly position, both as private and as a public-owned entity. Hence decisions on competition need to be made on the basis of what the long-term effects on efficiency will be in the industry

The presentation of options and concepts will take into consideration the economic characteristics of the industry described in chapter 3 and the technical characteristics described in chapter 2. Therefore, prior to the presentation of options, it will be necessary to explain the role of public service obligations in the context of services of general interest (section 4.2) and the possible implications of cost recovery (section 4.3). Then, the report will explain the different market segments in which competition may take place (section 4.4).

Options for competition will be then presented. As explained in section 3.4.5, water industry has traditionally been organised along one to one relationships based on geographically limited rights to provide a water service. These "monopolies" can be *de iure*, *de facto* or based on contractual links (mostly demarcation agreements). Thus, in principle, competition in the water market may take two different forms: competition FOR and IN the market. "Competition for the market" normally refers to the situation in which operators compete in order to obtain the right to provide one or several of the services of the vertical chain in a particular geographical area. In such a case, it is assumed that the right(s) to provide the service might be exclusive, albeit limited, either on its duration or on its material scope. This inevitably raises the question of whether economically it makes sense to maintain the exclusive rights to provide the service or whether it would not be more appropriate to allow for "competition in the market": i.e. the situation in which the position of an operator in one of these geographical areas is (totally or partially) contestable by different operators (either new entrants or a neighbouring operators).

Market contestability might be total if exclusive rights are removed, thus leading to full competition in the market, possibly through common carriage (section 4.5) or through retail competition (section 4.6). If this is not possible (for economic reasons, possibly in connection to public service obligations and/or cross-subsidisation issues), one could argue whether the partial contestability (either by the partial removal of exclusive rights or by the vertical unbundling of services) of parts of the market(s) initially covered by exclusive rights would make sense. If the reply is affirmative, then partial contestability could lead to competition in upstream (wholesale) market levels (section 4.5), competition in dissociable (not core-business related) services such as new connections and geographical market

expansion (section 4.9), competition in the supply of certain categories of customers such as the supply of large customers, either by common carriage, by retail competition or by new connections (section 4.7) or competition in ancillary services mostly through contracting out work (section 4.9).

4.2 PROVISION OF SERVICES OF GENERAL ECONOMIC INTEREST

Any competition model in the water sector must take into consideration, from the very beginning, the existence of services of general interest, which are a key element in the European model of society. The EC Treaty recognises the importance of these services in Article 16. It also states in Article 86 that competition (and internal market) rules apply unless it may obstruct the performance of the particular tasks assigned to these services but also that the development of must not affected so such an extent as would be contrary to the interest of the Community. At the same time it cannot be ruled out that observing its provisions on competition and the internal market is fully compatible with ensuring the provision of services of general interest.

The European Commission has grappled with these issues in the context of ensuring high standards of quality services at affordable prices, and in developing policies for services that are often regarded as social rights. The Commission has clarified its views on these issues in a Communication[17].

Some definitions of terms[18]

Services of general interest: This term covers commercial (market) and non-commercial (non-market) services which the public authorities class as being of general interest and subject to specific public service obligations.

Services of general economic interest: This is the term used in Article 86 of the Treaty and refers to commercial (market) services which the Member States subject to specific public service obligations by virtue of a general interest criterion. This would tend to cover such things as transport networks, energy and communications.

Public service: This is an ambiguous term since it may refer either to the actual body providing the service or to the general interest role assigned to the body concerned. It is with a view to promoting or facilitating the performance of the general interest role that specific public service obligations may be imposed by the public authorities on the body rendering the service, for instance in the matter of inland, air or rail transport and energy. These obligations can be applied at national or regional level. There is often confusion between the term public service, which relates to the vocation to render a service to the public in terms of what service is to be provided, and the term public sector (including the civil service), which relates to the legal status of those providing the service in terms of who owns the services.

Universal service: Universal service, in particular the definition of specific universal service obligations is a key accompaniment to market liberalisation of service sectors such as telecommunications in the European Union. The definition and guarantee of universal service ensures that the continuous accessibility and quality of established services is maintained for all users and consumers during the process of passing from monopoly provision to openly competitive markets. Universal service, within an environment of open and competitive telecommunications markets, is defined as the minimum set of services of specified quality to which all users and consumers have access in the light of specific national conditions, at an affordable price.

In principle, Member States are free to define services of general interest. There is a tradition in Europe to include water services under this category and to establish public service obligations on service providers. The notion of "public service" largely embodied in the concept of Services of general interest, is one that has a well-established tradition in many European countries. In France, a particular form of legal code was established for public service operations and in Germany, city or town governance of public services has strong historical traditions rooted in pre 1871 unification of the modern state.

[17] Communication from the Commission on Services of general interest in Europe, OJ C17 of 19.1.2001, p.4.

[18] See Annex II to the Communication on Services of general interest in Europe, *op. cit*., p. 23.

Different member states interpret and apply different approaches to the provision of services, both in the detail of the way in which they are organised and in the legal status in which these services stand in political society. Earlier chapters have discussed some of these differences between member states in the water sector. The tradition of public service will vary between countries, but in most countries it covers activities that are directly entrusted to public authorities and is a reflection of the political governance traditions of the country. In some European countries, this tradition has extended to include public management and control of network services. The rationale for this is that they provide services that are crucial for wider national interest reasons and for underpinning economic well being and growth. Also there are activities which require long term investment, and investment in, for instance, environmental protection or hygiene which prima facie may have no clear "market" drivers. Finally the "market" also may not be able to provide guaranteed access to services for all groups within the whole country. The objective to achieve universal coverage for water services is embodied by law in countries such as Denmark, Sweden and Finland.

The objective to provide certain services of a consistent quality on a universal basis (that to all users at an affordable price to all users), is likely to be driven by political considerations, though the "technical" arguments for managing its implementation will differ from service to service or industry to industry. In comparison to other network industries, water and wastewater services have a large number of external factors, such as public health, environmental protection and resource sustainability. In this context, there is a recognised public "good" and public service to the availability of water and wastewater services on a universal basis.

Services of general interest are not to be confused with public undertakings which may carry out activities which are devoid of any general interest, nor, of course, with the civil service itself. Indeed, the Treaty (Article 295) is neutral with regard to the public or private ownership of companies. Services of general interest are not defined by specific ownership arrangements but by their function. They are different from ordinary services in that public authorities consider that they need to be provided even where the market may not have sufficient incentives to do so.

In so far as activities covered by the services of general interest are economic activities within the meaning of the Treaty rules (and affect trade between Member States), they might be subject to competitive forces (competition rules and internal market rules).

This means that issues which are intrinsically prerogatives of the State, i.e. exercises of official authority such as ensuring internal and external security, the administration of justice, the conduct of foreign relations and other exercises of official authority are excluded from the application of competition and internal market rules. Also excluded are services such as national education and compulsory basic social security programs. Furthermore, many activities conducted by organisations primarily performing social functions which are not profit-oriented, will normally be excluded from the Community competition and internal market rules[19].

It might be debatable whether the supply with drinking water can be considered an economic activity. To this end arguments have been put forward in favour and against the notion of water as an economic activity. For the purpose of this study, it will be assumed that the provision of water is an economic activity.

Competition in the economic activities that have the consideration of services of general interest can be limited, implying therefore restrictions of competition and limitations of the freedoms of the internal market. Restrictions must be proportionate, should not exceed what is necessary to guarantee effective

[19] See generally the communication from the Commission on Services of general interest in Europe, *op.cit*., p.9

fulfilment of the public service mission (which is to be clearly defined and explicitly entrusted through an act of public authority) and shall not create unnecessary distortions of trade.

In the water sector, any limitation of competition will primarily relate to the question of the economic necessity to maintain exclusive rights to operate and if so, to the scope of the exclusive right. Even without exclusive rights defined in contracts, the fact of a monopoly provider existing will in create a situation of *de facto* exclusive rights. These issues will be later addressed, from an economic perspective, in this **chapter 4**. The proportionality and indispensability test in Article 86(2) of the EC Treaty will be analysed in **chapter 5**.

A second issue that may arise is the question of the provision of funding, since in principle compensation granted by the State to an undertaking for the performance of general interest duties constitutes State aid within the meaning of the EC Treaty rules on State Aid (Article 87 and seq.). The issues of price recovery and cost allocation in the water sector have been explained in earlier chapters. The proportionality and indispensability test in Article 86(2) of the EC Treaty will be analysed in **chapter 5**.

The link between the provision of services of general economic interest and the application of competition and internal market rules is also an issue that could be addressed through regulation (see **chapter 6**).

4.3 POSSIBLE IMPLICATIONS OF COST RECOVERY IN THE WATER INDUSTRY

4.3.1 Introduction

This section provides an assessment of the possible impact of a water pricing policy based on cost recovery on the opening-up of water markets for competition. The Water Framework Directive (WFD) requires that water pricing should be based on cost recovery, with transparency of costing. The Directive aims by 2010 to achieve sustainability in the water sector, tackling such problems as, for example, water scarcity, over-abstraction, surface water pollution and threats to wetlands. The issue of sustainability is high on the agenda of the European water industry, and cost recovery is seen as an important factor in achieving this goal. The fundamental problem is that water has traditionally been seen as a low value resource, leading to over-abstraction and an unwillingness to pay the cost of supply. The WFD further requires that adequate contributions to costs are made by all users (even those not receiving water services directly), including household, agricultural and industrial users

This section considers both of the following:

- Macro-economic effects: these include effects of moving to cost recovery on the wider economy, public perception and effects on rural areas;
- Micro-economic effects: these include the effects on the demand for water and the effects on revenue and operations for the water supplier.

4.3.2 Non market and Macro-economic effects

Water pricing policies can be a major strategy for mitigating the effects of water scarcity by creating incentives to conserve and allocate water efficiently. However, governments have traditionally subsidised water supply due to the benefits of public health and food supply through irrigation. This has led to problems of insufficient funding, resulting in declining condition of infrastructure, declining

service levels and inflated demand in some European countries. A further result is the inefficient allocation of water between users, leading to inequity of access among potential users.

The meaning of "cost recovery" is usually taken to mean that the price of water is set at such a level as to cover the costs of supplying the water. These costs include operating costs, the costs of maintaining the (often ageing) infrastructure and the costs of meeting legislative requirements, e.g. to improve the quality of drinking water to a given standard, etc. However, cost recovery in the sense described above makes no allowance for non-market costs and benefits such as those related to the environment resources and recreation. In addition, different users value water differently even though it is the same product, so that the value to domestic users of their drinking water will be different from the value to industrial users of their cooling/process water which will in turn be different from the value to anglers and sailors of their recreational water.

Various techniques have been developed by economists to value the non-market benefits of water, such as environmental resource costs and recreational benefits. One technique involves using surveys to determine the willingness of people to pay for a non-market good in preference to another good that has an established market value.

The issue of affordability is a very pertinent one when considering cost recovery, particularly if prices increase generally and cross-subsidies between the rich and poor are reduced. Rural areas often cost more to supply than urban ones and such areas may suffer economic decline if tariffs are de-averaged across the region and prices reflect the true cost of supply at a less aggregated level. In order to mitigate these effects, regulators may be required to pay particular regard to rural areas in ensuring their economic sustainability.

In terms of the agricultural sector, inefficient pricing of water is likely to have caused an inefficient mix of crops and an inefficiently slow adoption of new technologies such as trickle irrigation. However, since subsidies on the inputs to food production are largely passed on to consumers and there is limited capacity for farmers to absorb price increases, increases in the price of water may lead to higher prices for produce from irrigated farms. Eventually, price signals may result in changes in water use but the situation needs to be monitored since drastic action such as changes in land use may adversely affect the rural economy and national food production levels.

Cost recovery also requires water prices to reflect the scarcity value via long-run marginal costs (LRMC) of supply, although these can be difficult to measure in practice due to the requirement to incorporate forward-looking engineering judgements and demand forecasts. In the UK, the Office of Water Services (Ofwat) has gone some way in raising the issue of LRMC and ensuring that companies' policies in terms of tariff setting, resource and demand management and competition all fully reflect companies' LRMC values. In addition, if companies' prices are set below LRMC, they may be deemed to be predatory in the context of the UK's Competition Act 1998.

Increased regulation, under the right conditions, can lead to greater efficiency in water service provision and increased levels of service. A number of European countries have implemented or are considering new regulatory structures for the water industry. These include, the UK (England and Scotland), Italy, Ireland, France, Netherlands.

In summary, the move to cost recovery, accompanied by increasing competitive influences, effective regulation and institutional reform should lead to a more efficient economy and a more efficient allocation of water resources. Where there is the removal of subsidies, prices may increase initially due to this removal and the likely need to fund infrastructure improvements. Prices will reduce in real terms over the longer term as the industry reacts to incentives to become more efficient (assuming that prices are not driven to rise by other factors, such as improving quality standards). Where water prices

are being used to cross subsidise other municipal or public service functions then the opposite is likely to happen with prices being more reflective of true costs rather than being used as a covert tax.

4.3.3 Micro-economic effects

On moving to cost recovery, the price paid for each cubic metre of water will reflect the costs of supplying it, rather than be subsidised from general sources such as taxation. Therefore, the demand of customers that are charged on a measured basis through metered volumes will initially reduce in accordance with their price elasticity of demand (this is ratio of the change in demand to change in price). Over the longer term, as mentioned above, prices may reduce as the industry reacts to incentives to become more efficient (assuming that prices are not driven to rise by other factors, such as improving quality standards).

Price elasticities will be different for different classes of customer (e.g. industrial, domestic and agricultural) and are dependent on various factors, such as affluence and climate for domestic use and the scope in the markets for absorbing cost increases for industrial and agricultural customers. Price elasticities also vary between the short term and the long term for industry and agriculture. For example, price elasticity for agriculture and industry may be very low in the short term since it is an essential input and there may be few options for reducing consumption. Price elasticity may be higher over the longer term, however, as processes and practices innovate to use less water per unit of production. Price elasticities also vary according to the initial price of water. If initial prices are high, price elasticities will be higher than if initial prices are low, due to the ability to pay.

Price elasticities for domestic water use are generally fairly low (between -0.1 to -0.3, so that a price increase of 10% will result in a reduction in demand of between 1% and 3%). The reductions in demand tend to come from reduced wastage and reduced water use outside the home (gardening and car washing).

The “flip side of the coin” to the effects of price elasticity is that, if prices reduce in the long term due to increased efficiency, demand may actually increase. Tariff structures need to be implemented which encourage the efficient use of water such as rising block tariffs. Companies also need to implement additional measures to encourage water conservation, such as subsidising the cost of water butts, encouraging the use of water efficient appliances, water conservation media campaigns and educational programmes for schools. A partnership approach with the public needs to be adopted and this will be greatly enhanced if customers can see that the company is also saving water, such as through reducing leakage.

The partnership approach is particularly important in times of water shortage. When cost recovery is implemented, it is possible that the public may perceive water as more of an economic good than a public resource and may assert their right to use it since they are paying for it. Their co-operation to save water in times of water shortage will be enhanced if partnership approaches with the public are cultivated.

Customers who do not pay for water on a measured basis may also feel induced to increase consumption as they come to perceive water as more of an economic good. It is particularly important to communicate water conservation messages to such customers.

The potential variation in water demand may also have implications for the water and wastewater infrastructure, leading to either over or under capacity. However, the driving factors behind overall demand are likely to be more related to population changes, economic growth rates and agricultural production.

The effect on water utility revenue, on moving to cost recovery, is also influenced by a number of factors. Initially, increasing tariffs will increase revenue unless there is a reaction against the increases leading to widespread non-payment of charges. In many societies, water is seen as a "free" resource and many people may not realise they are paying for water if it is included within general tax or rates. The problem of non-payment may be exacerbated by the lack of enforcement routes.

By moving to cost recovery, provided that the above effects on revenue can be managed, utilities should be in a more financially stable position since funding/subsidy from external sources will have been terminated. This should lead to better long term planning, which is beneficial for an industry with long lived assets.

4.4 MARKET SEGMENTS IN THE WATER SECTOR

The different market segments that exist within the water sector will have different degrees of "contestability", which will either permit direct product competition that one would experience with "competition in the market" or will require competition for the right to operate, as in "competition for the market".

Some market segments are wholesale markets (i.e. operators supply other operators or large/bulk industrial customers) and retail markets (domestic customers and small commercial/industrial customers). Wholesale markets are in principle easily contestable. On the contrary, water distribution markets tend to be natural monopolies, except for new supply areas. ***Contestability*** is easier if there are technological developments, if services have added value and if the geographical position allows for multiple connections. In that sense, water and wastewater treatment stations might be in an easier position to operate in a competitive environment. It would nevertheless be useful to undertake a more detailed study into the economic and technical aspects of each market segment, in terms of gaining a better understanding of the impacts and benefits of introducing greater contestability. This could then be reviewed on a country by country basis in EU member states.

As discussed in Chapter 2, the water services are generally provided by organisations that are vertically structured (that is, responsible for abstracting, treating and supplying and distributing water to customers). This is either through vertical ownership or by contractual relationships between bulk suppliers and distribution utilities which confer exclusive and special rights on each other. In some cases these vertically structured water service utilities are also responsible for wastewater collection and treatment. However, wastewater services are provided by separate entities in many countries such as France, Germany, Denmark and Spain. Although the structure is on the whole vertically structured, a number of distinct market segments can be identified and depending on the particular conditions of each case, could be considered to be "relevant markets" under EC competition law analysis.

Advantages and disadvantages of vertical disaggregation. The main advantage of vertical disaggregation is that it creates greater transparency in the costs associated with each component, making it easier to identify inefficiencies. Another positive feature is that it increases the number of operators within a region or country, creating some contestability, particularly if operators of one component of the industry can enter another component easily. The disadvantages of disaggregation are that it entails higher transaction costs (the costs of arranging contracts among the various component operators) and operators tend to perceive disaggregation of major components as risky, especially if the public authority continues to operate an essential component. In particular, water services operators might be reluctant to accept responsibility for production without having access to the revenues from distribution, and distributors worry about the security of bulk supplies when they do not control production and treatment.

Possible implications of competition on the structure of the water industry, as with other public utilities, are likely to occur. An interesting view[20] of structural separation in public and regulated industries, states that the benefits of a competitive environment may not be properly achieved if incumbents control essential facilities and bottleneck facilities (such as a treatment works or the pipe network to customers) and at the same time will compete in the competitive parts of the industry. Therefore separating ownership and operation of these "facilities" will be the most appropriate means to enable competition to take place. Accounting or corporate separation are considered as possible solutions, but not sufficient to deal with possible access denial. The same is considered to be true for regulatory measures. All this remains debatable.

The key issue defined by the *OECD* in this is:

"*Recognising that ... the regulated firm has the ability, in the absence of antitrust or regulatory controls, to restrict competition by restricting the quality or other terms at which rival upstream or downstream firms are granted access to the services of the non-competitive activity, restructuring the capacity of the non-competitive activity so as to limit the scope for new entry in the complementary activity, or using regulatory and legal processes to delay the provision of access"*

This restructuring should expose the segments of the market that provide "contestable" opportunities to apply competition rules.

4.4.1 Bulk Water Supply Provision and Treatment

The abstraction and management of water resources, as described in Chapter 1, is to be largely regulated in line with the Water Framework Directive and to be undertaken within a river basin management context. Within Europe, the bulk water supply provision is undertaken directly by the service provider, be that a municipality or a group of municipalities sharing a resource and infrastructure, on a regional basis. Within the geographic zones of supply, industry and agriculture will often have their own water rights to abstract, treat and supply for their own economic purpose. A competitive choice exists for those that have these water rights, either to continue own supply responsibility or connect to the public supply system.

Depending on national legislation the owners of these water rights can "grant" the use of these water rights to supply, to a third party *provider* or these water rights can be used outside the economic use of the owner; that is to provide water services to third party domestic or non-domestic customers.

Abstraction licensing with the trading of those licence rights is being discussed in the context of the Water Framework Directive and may provide an opportunity for the development of competition in the provision of resources and the enabling of new entrants into the market. Again the implementation of licence granting would be subject to the water resource management strategies at river basin level.

Within England and Wales it is proposed that new companies can apply for abstraction, production and treatment licences. They might apply for a licence from the regulator where there are spare resources and this complies with the water resource management policy of the regulator. Or they might purchase an abstraction licence from an existing abstractor. Once a new entrant has the licence they would then supply direct to their customer or customers, or they would need to go though an existing network operator. The former instance happens in many European Union member countries, the latter not at all.

The issues relating to abstraction licence trading are significant, but are not described within this study.

[20] OECD Draft Council Recommendation concerning Structural Separation in Regulated Industries

4.4.2 Water Supply and Distribution

This market segment trend towards a single management responsibility covering single infrastructure facilities. With the exception of the UK, these are owned and provided under the responsibility of municipal or local government entities. In a number of cases, service provision is undertaken by private operating companies, which are totally private (in France) or are municipality-owned companies which are constituted as private companies (in Italy, Germany, Spain and Sweden for example).

The focus for the application of competition policies and rules in this market segment is with the actual water service providers or undertakings, not the municipalities. It will concern the manner in which the holders or owners of water distribution networks grant licences or confer rights on the providers of the services. Competition rules would seem to concern the feasibility of allowing third party access to the network in order to provide services to customers or in terms of ensuring competition for the rights to provide services for a given period of time under contract. These issues form the main thrust of this study since it is this market segment that has the most direct relationship with end user customers of water services. Concepts of competition are described below.

Within this market segment it is possible to identify a market for operating concessions. This is also outlined below.

4.4.3 Wastewater Collection

Although some of the characteristics of the water service distribution can apply to wastewater collection systems, there are significant technical and economic differences, which will impact on issues of competition.

In some countries the wastewater collection services are undertaken by the water service utilities; in others they are separate. The key difference for domestic customers is that the collection system costs include significant infrastructure costs relative to the management of rainwaters. However, it is a network business like distribution, but at the same time, the network traditionally has to collect rainwater and its dimension has to be in a position to do so although recently the tendency has been to keep separate the rainwater from the wastewater. This is basically the economic and technical difference. From a competition perspective, the problem of cost allocation for rainwater collection could be solved by claiming that the customer in case of rainwater collection is the population in the area covered taken as a collective. In such a case, it is for the public authorities to bear the cost (as customer), but not for domestic customers.

4.4.4 Wastewater Treatment and Disposal

This market segment exists to serve the purpose of environmental protection of water resources and the protection of the quality of the aquatic environment. In terms of applying competition rules, it is the one segment which has developed as a "contestable" market following general procurement rules of the EC in seeking third party contracts to build and operate infrastructure facilities, such as in Scotland, Belgium, Portugal, Greece, Ireland, France, Netherlands, Italy and others.

4.4.5 Other Market Segments in the Provision of Water Sector Services

Competition takes place or has the potential to take place in a number of market segments in the water sector, and that can drive efficiencies and improved quality of service. The sorts of market segments include:

- the procurement of specific engineering or business services

- the limited outsourcing of specific services such as meter reading, IT services, billing, pipe cleaning and maintenance, etc

In general these are market segments outside of the "core" activities of the water service provision and do not encroach upon the undertakers' rights to supply customers. In these market segments, it is the water and wastewater undertaker which is the customer and competition rules concern the application of the undertaker of competitive procurement rules, which observe the principles of transparency and contestability.

These market segments are ancillary services or activities, and are not the central concern of this study.

4.4.6 Market for Concessions

The market definition for concessions is particularly important in the water industry, since it represents the primary means in which public authorities contract the operations of water services to third party entities. It also represents the main elements of the discussion on *competition for the market.*

The meaning of "concessions" needs to be defined. Concessions for the most part and familiar in other parts of the world have been characterised as long term operational contracts which require the concessionaire to undertake a substantial investment programme and take the associated financial risks. For example, in France there are very few contracts of this sort, as investment remains the responsibility of the municipality.

The market definition for concessions needs in this study to follow that defined in the Communication on Concessions (2000/C 121/02). This definition covers all contracts between public authorities and service delivery entities, under either public or private ownership, which involves the granting of exclusive rights to operate the whole or in part water and wastewater assets and services over a given period of time. The application of competition rules and the scope of these rules on contracts defined as concessions will be determined by the levels and forms of financial risk to the contractor in the contract.

4.4.7 Geographic Market

The geographic market for water and wastewater services in Europe is very rarely one that involves a cross border transfers.

The provision of bulk water supply from abstraction to the point of distribution (either at a treatment works or a storage or pumping facility is done either at a regional level or river basin context. Distribution for both water services and wastewater collection is undertaken within the geographical confines of local networks owned by municipalities. Wastewater treatment and disposal services are also provided at a local municipality or regional level. This constitutes the substantial part of geographical market definition.

Meanwhile in some countries and across Europe, some companies operate at national or European levels in competing for contracts to be granted licences to operate water service systems. Two companies, Ondeo and Vivendi, operate in this manner, whilst RWE and E.ON operate in this matter within Germany.

4.5 COMPETITION IN THE MARKET – COMMON CARRIAGE

Competition *in* the water market is generally regarded as a water services competition environment that is characterised by common carriage. This is defined as "making available to customers a choice of water supplies through the transfer of water between the distribution networks of appointed business" (WRc, 1996) and that the granting of third or fourth party access is fundamental to the establishment of

a competitive water network market. Most of the discussion regarding common carriage possibilities has been undertaken in England and Wales.

In the electricity sector, third party access competition works because producer 2 may be able to produce electricity at a cheaper price than producer 1 and therefore may be able to sell electricity at lower prices (assuming that the cost of transport is similar if not identical). In the water sector the main question will be to identify where the comparative advantage would be that would allow supplier 2 to compete with supplier 1. This could be in the cost of water abstraction and thus if so could allow and make possible water-to-water competition. Comparative advantage is unlikely to lie on the cost of transport because supplier 1, the incumbent, will usually have better transport costs. Savings may be possible at the stage of water abstraction and subsequent treatment and a competitive market with common carriage could assume that competitors have water abstraction rights, possibly implying tradable abstraction licences, or water networks near a contested market, such as one for large industrial or commercial users. In theory common carriage might also include a situation in which a competitor does not have abstraction rights, but might be able to build a treatment station with new technology allowing it to provide treated water at a lower price. This would require the new competitor to access bulk water supplies from the abstraction right holder and would also need access to the distribution network (which could belong to the abstraction right holder). This section looks at some of the issues relevant to the development of a contestable market for the provision of water services which utilises common carriage principles.

4.5.1 Technical and Operational Issues

There are a number of issues arising from a situation where more than one company is involved in the supply of water to a single customer. These include responsibility to the customer, relationship with the regulators and relationship between supplier and incumbent. The complexity of the issues depends on whether the customer is a large user, a small commercial user or a domestic customer.

The main responsibility to the customer is to provide a secure supply of good quality water. Currently, one company in each location maintains a customer service operation and this is where customers make complaints of poor service and ask for information. The same company responds to the customer approach by taking action on their supply system or sending a representative to visit the customer. Under common carriage, the responsibility for the problem may lie with the organisation that treated the water and/or the operator (or operators) of the pipe network. When the complaint is received, the source of the problem may not always be clear.

Implications of mixing waters through third party access has the potential to create the greatest degree of debate and discussion during the implementation of common carriage competition. This both in terms of assuring water quality and in terms of allocating costs for any additional quality protection and asset maintenance activities by the licensed suppliers.

Water can be regarded as a perishable product, which can undergo undesirable changes during distribution and storage. These changes might cause the water to fail the stringent statutory standards of quality. The time taken for these changes to occur can be viewed as a form of shelf life. The mixing of water may influence this shelf life, and the additional residence time associated with the conveyance of waters over long distances cause the water to have exceeded its shelf life before delivery to the customer.

Treated water is can be an unstable product of highly variable source dependent quality. It is currently treated on the basis of a define shelf life and within defined zones of the distribution system. There are a number of specific technical, health and quality issues relating to blending or mixing of waters. These include increases in sediment deposition and consequent build up of biological contamination, resulting in an increase in disinfection and probable increases in maintenance costs.

Some incumbent water companies will have standards that are stricter than the national statutory standards or by having precautionary policies regarding the use of certain chemicals, for example do not chlorinate and or do not use aluminium in treatment. However is this considered a valid argument against accepting in to that incumbent's network, water that is otherwise acceptable in terms of health and quality, or would competition policy view these as barriers to competition. Is it valid to reject water, which meets national or European standards of quality, but is aesthetically different to that supplied by the incumbent, and may therefore lead to complaints from other customers not benefiting from the new competition environment?

A single operator currently has responsibility for managing a serious incident or emergency. It would be essential that the responsibility is clear in a situation where more than one organisation is operationally involved.

Water utilities would need to work much more closely than they do at present. This would bring a shared responsibility for metering and monitoring, and a consequent increase in information transfer. Issues arise over the requirement for accuracy and standard of sampling and measurement. Protocols will be necessary to regulate the minimum requirements for measurement and the rights of each party to access the information and the form in which this should be supplied. Network modelling is an important and time-consuming part of distribution operation and planning. The feasibility of cross-border transfers would most effectively be answered by computer modelling.

As well as water quality issues, there are a large number of other technical issues raised by common carriage. These include the effects of hydraulic changes, distribution effects of changes in water composition, effects on customers pipe work, managing customer reaction and managing transfers of water.

4.5.2 Economic Issues

The water and sewerage industries have specific characteristics, which present a number of challenges, which need to be overcome if competition through common carriage is to work effectively. Hence it is important to consider carefully the potential benefits achievable from such competition if robust solutions to these difficulties are to be found.

Sound proposals for common carriage competition could deliver:

- incentives for utilising efficiently resources within and beyond the industry (allocative efficiency);
- incentives for undertakers to offer services at the lowest possible cost, while offering the desired quality of service (productive efficiency);
- incentives for undertakers to innovate products and techniques (dynamic efficiency); and
- the minimisation of any costs imposed on society in general and disadvantaged social groups in particular.

Of course different players will have different emphases, with politicians being concerned to minimise the social costs of competition (for example the elimination of cross subsidies), while incumbent suppliers will be concerned to ensure that there is no regulatory distortion of prices and hence inappropriate entry. The area where common carriage is likely to deliver the greatest benefit is in resource management efficiency, by allowing water to be moved from abundant/low cost areas to places of relative scarcity.

When designing a framework for common carriage, there are a number of inter-related issues would need to be considered. These include the nature and scope of competition in the wholesale and retail

markets, the nature of the common carriage arrangements, the pricing rules used for access to the distribution system, the structure of the industry, and the manner in which existing cross subsidies are dealt with – for example through universal service obligations.

In addition to these generic issues, there are a number of specific characteristics of the water industry which need to be considered. These issues include the relatively high cost of distribution, the lumpiness of investment in new resources, levels of service and security of supply, and ability of water utilities to recover the costs of depreciation.

When drawing on the experience of other network industries, it is important to recognise that water, like other industries, has its own distinct characteristics that will shape policies on common carriage. First, water is neither a "specific package" network such as railways, roads and telecommunications. Nor is it a network where the product is completely homogenous, such as gas or electricity. Instead, water quality and characteristics are specific to its source, and significant externalities can arise in mixing waters and/or sending it through someone else's pipes. Secondly, water is different to other industries in the degree of substitutability between resources/treatment and distribution. In the water industry, there are important trade-offs to be made in the scale and unit cost of resources and the distance over which the water is transported. By contrast, gas is characterised by a set of fixed entry points to the network, and in electricity the cost of transmission is low. The implication is that in water, the efficiency of the system is hugely sensitive to pricing distortions.

The experience of other regulated industries is that competition almost always highlights distortions between prices and costs. In telecommunications, the large gains from innovation have over-ridden this problem. The danger is that unless the access regime is carefully and consistently constructed, the inefficiency effects of such tariff distortions in water will outweigh the efficiency gains from competition.

4.5.3 Potential Efficiency Gains

In some electricity markets, generators place bids to supply to a spot market on a half-hour-by-half-hour basis. The Grid is then responsible for distribution to the electricity companies and in some cases retail customers. Capacity is chosen according to the short run marginal cost of the generating capacity, ensuring productive efficiency.

Such a framework is not applicable to water, where there is an overall scarcity of resources (the equivalent to generating capacity), and capacity is only available in large "lumps". The framework adopted for water will be more analogous to that in gas, where suppliers enter into individual contractual agreements with customers, which is supported by common carriage contracts with the gas network operator to transport the gas. Clearly the relative shortage of new resource and treatment capacity will necessarily limit the productive efficiency gains from common carriage.

4.5.4 The Scope for Common Carriage Competition

A related issue to what extent the sector is opened to potential competition via common carriage. The electricity and gas industries saw competition beginning for large users, but then successively widened until ultimately competition reached domestic users. Political pressure to extend the benefits of competition to domestic customers was an important element of this process.

However, there are several features of the water industry that create particular problems in extending common carriage competition to domestic customers for water and sewerage services. These are mentioned above and cover issues such as water quality (both health concerns and differences in water hardness, taste and chlorine levels for instance), hydraulic implications, security of supply issues, allocations of costs for pipeline maintenance and other technical issues.

4.5.5 Pricing Rules for Common Carriage Access

There is an extensive literature on alternative access pricing rules. These include marginal or incremental cost pricing, Ramsey Pricing, the Efficient Component Pricing Rule (ECPR), global price caps and fully allocated pricing. Each of these rules has different efficiency properties, and will be appropriate only under particular conditions. Thus Ramsey Pricing and ECPR are suggested as a means of overcoming the need to cover costs when there are economies of scale in providing a network service, and or there are network externalities operating. See box insert for explanations, provided with thanks to the MIT Dictionary of Modern Economics, fourth edition.

Marginal Cost Pricing - A pricing practice pursued by private firms or public corporations in which price is made equal to marginal cost. Given continuous revenue and cost curves, this implies setting price at the point at which the demand curve cuts the marginal cost curve. The market conditions prevailing in perfect competition ensure marginal cost pricing since average and marginal revenue are the same. Hence the requirement for profit-maximisation, that marginal cost be equal to marginal revenue, means price equals marginal cost. Under imperfect competition, however, profits will not be maximised with price equal to marginal cost since average revenue will exceed marginal revenue. Hence marginal cost pricing under imperfect competition will only come about through some form of regulation or taxation. In the public sector, nationalised Industries are recommended to use marginal cost pricing, the rationale being that it maximises economic welfare, for then buyers put a valuation on the last unit consumed, which is just equal to the resource cost of the last unit produced, a condition necessary for the optimal allocation of resources.

Incremental Cost Methods price services or products on a basis of only the incremental costs of their production, while one or more pre-existing services or products support the fixed costs. Some economists believe that incremental cost pricing is the most preferable method for setting transfer prices. This is because any affiliate transfers at incremental cost do not adversely affect utility customers, and incremental cost-based transfer prices will maximise economic efficiency.

Ramsey Pricing - widely used in the theory of environmental externalities, a rule which it may be necessary to apply to all prices in an economy, when at least one good is a non-depletable public good. Where the provision of such a good cannot be financed through taxation because the amount is too great to be raised by lump sum taxes, all prices are required to depart from underlying marginal costs under conditions of optimality.

Efficient Component Pricing Rule (ECPR) - a rule for determining interconnection prices, under which the price is composed of the incremental cost of providing the interconnection service plus the profit (including contribution to common costs) that the network operator foregoes by selling interconnection rather than the final service for which interconnection is used.

Global Pricing Caps - provide for a price ceiling below which the regulated firm has price flexibility below the cap, but is strictly precluded from pricing above it. More detailed information is available through the web-site of www.ofwat.gov.uk

Fully Allocated Pricing - fully allocated cost methods provide that revenues collected from the sale of services and products or capital assets equal the sum of the direct costs plus an appropriate share of indirect costs. This method of pricing results in the regulated utility and the non-regulated affiliates paying the same price for shared services and products. Many regulators believe this method of pricing results in a fair outcome for utility customers.

In water and sewerage distribution, economies of scale (with respect to distance) and network economies are probably relatively minor, compared to industries such as telecommunications and gas.

If used, there will certainly be issues surrounding the appropriate form of incremental cost pricing. Although there are differences between tariff policies of member states, generally electricity uses zonal charges, while gas bases its charges on entry and exit points (some countries may use distance related tariffs). In the water industry, some controversy still surrounds the calculation of the long run marginal cost (LRMC) of water supplied to large users (which is assessed purely in the dimension of volumes), and relatively little attention has been paid to the measurement of the marginal or incremental cost of distribution.

A particular issue that needs to be addressed is that of capacity constraints. Short run marginal or incremental cost pricing deals with such constraints directly. However in practice utility access pricing is often based on long run incremental costs which averages costs across periods of fluctuating demand.

The resultant capacity constraints impose a requirement for some form of additional charge and or obligations on the network operator to invest in sufficient capacity.

4.5.6 Industry Structure

An introduction of common carriage would lead inexorably towards a re-examination of the appropriate structure of the industry. Concerns about discriminatory behaviour mean that ultimately there will be pressure to separate distribution activities from the potentially competitive sides of the business, such as production and or retail services.

The issues involved in the water sector require careful consideration. This is because the operational decisions of the water industry are often more inter-linked that the other utilities, so that separation can result in the loss of valuable trade-offs. For example, there are trade-offs between leakage control and resource and treatment provision, and likewise between tariffs aimed at demand management, such as peak tariffs, and additional capacity.

4.5.7 High Cost of Distribution

As discussed in Section 3, one of the important industry specific considerations in water and sewerage common carriage, namely the relatively high cost of distribution. As well as the cross-subsidy issues, the high cost of distribution will also limit the potential gains from improvements in productive efficiency which result from common carriage.

In this context, it will be important to identify the appropriate cost drivers of water transportation and the relevant time frame. If pipes are sized according to non-volume considerations (such as fire fighting), long run marginal costs may be relatively low, and much lower than the existing average cost.

For common carriage to be worthwhile, the improvement in efficiency that results from using a new source must be more than the additional cost involved in transporting the water further distances.

4.5.8 Investment and Resources

A second characteristic of the industry is that investment and resource capacity is typically very "lumpy", in that it is most cost-effective to undertake large scale schemes. This is important for two reasons: first it suggests that there may be significant gains from common carriage provisions as it enables spare capacity to be utilised more effectively (although this is only to the extent that the benefits are not outweighed by high distribution costs).

However, it also introduces difficulties of efficiency and fairness. Given that demand grows only slowly, and assuming that future demand cannot be met solely through demand management and leakage control, there will almost always be some spare capacity somewhere in the system (albeit less spare capacity than under conditions of no common carriage) and present difficulties in allocating responsibilities for the "spare" capacity.

4.5.9 Levels of Service

A further feature of the water industry is that there is little scope for customers to chose their own individual level of service, in terms of security of supply, pressure etc. The service is effectively provided on a joint basis to all customers in the region. This opens up the risk that competition might take place on the lowest common denominator.

4.5.10 Wastewater

Some of the issues identified in the context of common carriage for bulk and treatment of water services can be equally applicable to the wastewater treatment. However, as this is often more localised than the water distribution system, the issues are different. Wastewater networks are normally gravity based with the treatment works at the lowest part of the system before discharge to the environment. Although it is possible to have different networks connected to the one treatment facility, this would be an economic decision and would be done by increasing capital spend with a likely increase in operational costs caused by additional pumping requirements if the networks cover a large distance. Land availability also becomes a key consideration both for the design of new works and if an existing works is to increase its treatment capacity.

One suggestion is that treatment works could be designed and built with spare capacity in order to facilitate a competitive market for wastewater. Treatment works are designed to specific treatment requirements and that includes hydraulic characteristics and loadings. It is extremely expensive to maintain spare capacity, which could result in degradation of the assets. Some wastewater treatment operators, such as in Rome, do accept (on a commercial basis) tankered wastewater effluents during periods of the day that the treatment processes can deal with and can be discharged safely to the environment.

The introduction of small scale package treatment plant suggests that there may ultimately be more scope for competition, which improves the scope for efficiency gains to follow from shared networks. This is likely only to be a feature of relatively low risk and predictable effluents. As against that, however, the more localised nature of the sewer systems means that the scope for efficient trades will be lower.

There are also quality issues, especially with industrial effluents, and in meeting wastewater discharges to the environment.

4.6 COMPETITION IN THE MARKET - RETAIL COMPETITION

As with the discussion on common carriage, water industry in the England and Wales has been a focal point for developing concepts for retail competition in the water industry. Under this proposition, the current monopoly water suppliers would separate their retail operations from the other parts of their organisations. These retail activities include customer interaction, payment handling, water pricing and tariffs. The responsibility for all network and production operations, water quality, environmental issues and demand management would remain within current monopoly providers.

New entrants would need to be licensed to provide the retail services and would pay the incumbent monopoly water utility for its services; water distribution, treatment and transportation, and where appropriate wastewater transportation, treatment and disposal. The charges made by these asset owners and operators would be regulated and reflect the costs of the water utility activities, less the retail parts.

A retail licence holder would not have any physical contact or operational involvement with the pipe network or the quality and supply of the water itself, which will be supplied to its customers' tap by the network operator. The "retail" company would buy the water that it needs to serve its customers from the entity responsible for the network or from a company with an abstraction licence.

The advocates of retail competition argue that the proportion of the price allocated to retail costs is generally understated and that unbundling these costs could deliver real benefits to customers, and generate new innovative ways of contributing to national water policies, particularly in relation to demand management and conservation.

In order to implement such a scheme the current retailing activities of existing water utilities would need to be separated from the operational activities.

Water quality responsibilities would remain with the operational companies as would all activities relating to wastewater collection, treatment and disposal.

The key economic issue to implementing this structure of competition in the market will be to ensure a correct allocation of activity costs and margins and that this would create sufficient incentives for new entrants to enter the retail market. It may be that new entrants could undertake to provide savings by approaching customers from a multi-utility perspective. More information on estimates for possible savings would be useful, though it is likely that utilities operating in the private sector have undertaken these studies within the confidential confines of their business strategy.

In terms of meeting the perceived risks to drinking water safety and environmental protection, the proponents argue that the existing water utilities retaining operational responsibility would also retain obligations for water quality and the environment. The cost for undertaking these responsibilities would be passed to the retail companies.

4.7 COMPETITION IN THE MARKET – COMPETITION FOR LARGER USERS

Competition for large users has been a feature of competition in some countries. Large users are generally agricultural or industrial.

Given the nature of agricultural use, for irrigation purposes and the fact that water is normally drawn directly from the environment, used untreated and usually regulated by water resource protection organisations, there has been little, if any, interest in competition between suppliers. The whole question of agricultural use for water is wrapped up in implementation of the Water Framework Directive and any reform process of the Common Agricultural Policy (CAP). CAP is relevant in this context as it plays a major role in forming the level of agricultural demands.

Other large users of water use are industrial and commercial firms. In most countries of the EU these firms will have their own rights to exploit water resources and will not be connected to the public network. The "competitive" choice for these customers will be to decide whether to undertake the exploitation and management of water supply themselves (self-supply) or to connect to the public supply. For wastewater treatment, firms have the ability to contract out the construction and running of full or pre-treatment facilities.

In the England and Wales most large industrial users are connected to the main supply system. A system of "inset" appointments allows these large users to choose an alternative licensed supplier. Inset appointments allow one company to replace another or the statutory service provider for a specified geographical area.

An inset can be granted for a site that has no connections to the public supply. This is known as greenfield inset – there is no volume threshold to meet. If there is an existing supply within the proposed area, then the customer can consent to a charge of supplier if he consumes at 100 megalitres per year (Ml/y). In England and Wales this allows approximately 2,000 large users to apply for a change in supplier.

Inset appointments have been criticised on the grounds that it is not customer-driven, but that the initiatives for inset usually come from the new entrant undertaking who selects the customer of their choice. Critics argue that the process has not introduced more competition (only 9 appointments out of a possible 1,500).

Also alongside this process, utilities can offer discounts on the tariffs to larger users. Here, large users are able to negotiate lower tariffs if their company can provide that it is cheaper to supply them, eg the supply is entirely through large pipes.

Separate tariff agreements with larger customers can undermine cross-subsidies that characterise most of the water sector. Under this scheme, large users cost less and hence should pay less. Critics of this do not describe this as competition but rather as a one-off redistribution of costs.

New proposals from the British Government will lower the threshold to 50 Ml/y (some arguing that this should be possibly lower at 10 Ml/y) with new entrants being licensed to provide water services and the network to operate on the principle of common carriage.

4.8 COMPETITION FOR THE MARKET – DELEGATION OR CONTRACTING OUT OF SERVICES TO THIRD PARTIES ("CONCESSIONS")

Competition *for* the market in which utility companies compete for contracts to provide services to the market is considered by most commentators to be the most relevant to implementing competitive influence in the water and sanitation market. The rationale for this is frequently based upon the belief that the most significant efficiencies are to be achieved in managing and utilising capital programmes, and in achieving efficiencies in the operations.

This is borne out by evidence of many contracts based on BOT (Build, Operate and Transfer) and DBO (Design, Build, Operate) and other derivatives, in for example Ireland, Belgium, UK, Greece, Italy, Portugal. The contracts are for the *operation* of the assets, whilst the government or municipal body retains ownership.

Competition for the market will usually mean that the winner of any competitive bidding process will obtain an exclusive right to provide services for a specified time period. Competition to obtain an exclusive right to provide a service raises some important issues. Some are of regulatory nature such as the asymmetry of information (both between the public authority and the water companies, and between water companies when the contract is tendered for renewal) and the question of the regulatory capture. Some others are related to the competition between the companies: the possible lack of enough bidders, the restrictive agreements between bidders (bid rigging, market allocation etc) or even the possible abuses of dominant bidders.

In addition, there is significant evidence that efficiencies can be made through the competitive outsourcing of construction and some operation activities. In Germany for example, most of these are contracted out, resulting in much of the water industry's cost base being subject to some market influences. In France, the delegation of operations and maintenance activities to the private sector has been commonplace since the mid 1800s.

The key test to the successful implementation of competition pressures in these areas is the degree of "contestability" that exists for each contract and the processes that ensure transparency and opportunity and that deal with concerns related to incumbent advantage and possible collusion.

4.8.1 General Issues

The contracted-out approach is widely used for support services and management contracts where competitive bidding can be repeated frequently and fees do not have to be renegotiated during the life of the contract. It is also applied for lease contracts (10 to 15 years) and concessions (25 -30 years) and for selecting an owner/operator for a BOT (Build ,Operate and Transfer), but in these cases the benefits of competition can be limited. One important benefit is that, if conducted properly, the competitive

process can be perceived as transparent and fair and this enhances the viability of the subsequent contract. Competitive bidding also solves the problem of setting the utility operator's initial fee, but subsequently rules are needed to govern periodic adjustments in the fee.

The threat that the contract or license to provide service could be terminated if performance is inadequate helps to make up for the lack of on-going competition. This threat is probably more credible for a lease contract than for a concession or privately owned service because in the latter cases, the public authority would have to arrange to reimburse the operator/owner for very costly assets if it moved to terminate the contract early.

Not all components of water supply and sewerage are subject to the same economies of scale. As mentioned earlier it is possible to separate production and treatment of drinking water from distribution, and to separate sewerage from sewage treatment, and disposal. This approach has been used primarily in large, well-developed urban areas and has largely been used in developing contestable areas for competition for the market.

Contracting out support services such as meter reading, bill preparation and vehicle maintenance is the most common form of vertical disaggregation, and one in which competition for the market is usually very strong. Economies of scale are not important for most support services, so multiple contracts can often be awarded for the same type of service. Since the contractors' investment costs are usually very low, contracts can be awarded for relatively short periods, and competitive bidding is repeated frequently. Reliance on this approach to vertical disaggregation requires a strong capacity to administer contracts and a judicial system that enforces contracts fairly.

The development and implementation of contracts that provide for competition in the market can be time consuming and costly and it will be important to ensure that cost benefits can be realised

4.8.2 Forms of Contracts

The most frequent form of competition for the market is featured through franchising aspects of the water utility's operations or capital investment programme through;

- Management contracts
- Lease contracts (including affermage used in France)
- Concessions (which include operations and investment responsibilities and are operating in Spain, France and Italy, and more often than not includes the involvement of private sector partners)
- BOO/BOT/DBO

The term concession is one that has a wider international meaning, which involves the contracting out of operations and investment over a 20-30 year period and involving high financial risks. It is also a generic contract category for some member states covering other forms of contractual relationships.

The following table summarises some of the key areas of risk and responsibility for these different contract types when for instance contracted to the private sector.

Option	Asset Ownership	O&M	Capital Investment	Commercial Risk	Duration
Service Contract	public	public/private	public	public	1-2 years
Management Contract	public	private	public	public	3-5 years
Lease	public	private	public	opportunities for public/private risk sharing	8-15 years
Concession	public	private	private	private	25-30 years
BOT/BOO	private/public	private	private	private	20-30 years
Divestiture	private or private/public	private	private	private	Indefinite (may be limited by license)

The most extensive option is the *concession contract*. Under this arrangement the concessionaire finances, builds and operates the assets necessary for the delivery of the water supply and/or sewage disposal services. That is the concessionaire takes on the financial and operational risks. The contracts can specify the levels of service, which must be achieved and the tariffs that can be charged. Thus the concessionaire takes on the commercial risk for providing the service, although the contract often contains let-out clauses allowing for tariff revisions to reflect significant changes in circumstances. Contracts of this sort frequently provide a form of exclusive right to operate within a geographic area as an incentive to attract wider competition at the bidding phase

As mentioned earlier in the chapter, many member states consider the definition of a concession to be broader than that indicated above and including the following arrangements.

The *lease contract* is similar to the concession contract except that, in this case, the municipality provides the assets and investments and whereas the lease company is responsible for the operation and maintenance of the installations.

The *management contract* is similar to the lease contract. However, in this case the municipality collects the charges and pays a management fee (and sometimes a performance fee) to the company for the service provided according to the conditions laid down in the contract. The management company is responsible for the expenditure and as its income is generally fixed and sometimes performance based in the contract there is a certain financial risk for the management company.

The *management contract with profit participation* is a mixture of a lease contract and the direct operation of the service by the commune. In this case the municipality takes on the responsibility for the installations and the risks. The operation of the facilities is transferred to the management company which, however, is directly responsible to the municipality. The municipality carries any losses but any profit is divided between the municipality and the management company to provide an incentive to reduce costs.

Under the *service contract* only certain aspects of the operation of the facilities are delegated to third parties (eg. the maintenance of the facilities).

The most widely used contracts are service contracts, although, more recently the mixed type (management contract with profit participation) has gained prominence. The large investments required to meet the EC Urban Waste Water Treatment Directive has, however, seen some increase the interest in concession and BOT type contracts, which require significant financial investment risks imposed on third party contractors.

The contracts can be restricted to certain functions of the service, for instance provision of drinking water treatment, with the municipality retaining responsibility for the distribution system.

Contracts are normally granted after competitive tendering for a certain time period (usually up to 25 years). At the end of the concession period the facilities return to the ownership of the municipalities.

In France, where these contracts are most widespread, and increasingly in Spain and Italy, the “price” for the service provided by the contract operator is set through the bidding process. The "rates" then set for customers are determined by the elected body or independent regulator that administers the service area. The rates will include for payments to the contract operator, as well as for any other costs considered appropriate (eg. capital improvements). The "fairness" of the rate results from the ability of elected officials to gauge customer satisfaction. Regulation is typically hands-off with the courts being used to settle disputes. Efficiency gains are also sought through the fully competitive bidding process.

Municipalities retain ownership, let the contracts for service provision and negotiate the contract conditions including tariffs and service levels. Depending on the type of contract, the municipalities may also be required to make investments in assets and or collect the water service charges. The Municipalities also regulate abstractions, emissions and drinking water quality.

Regulation can become the key mechanism to ensure that competition for the market can and will deliver the efficiency and levels of service benefits intended by the introduction of competitive forces. Regulation can ensure that concessionaires contract out as many services as possible can maintain the pressure for efficiency on long term contracts. Also by the use of comparative competition, regulators and customers can compare performance and thus maintain competition forces on the utility, whether public or private.

Finally, tariffs are determined in the contracts. Tariffs generally include a fixed part (subscription) and a part that is proportional to consumption. The tariff is established on the basis of the forecast operating statement submitted by the operator in support of his bid and which takes into consideration the foreseeable changes in income and expenditure over the duration of the contract. This document, which is usually non-contractual, facilitates contract negotiations. The contracts also include inflation-indexed water tariff revision clauses; revision of water rates takes into account, in particular, the changes in salaries and social charges as well as the cost of energy and chemicals.

4.9 COMPETITION FOR NEW WATER AND SEWER SERVICES

Incumbent water utilities generally have exclusive rights to supply new customers and this is often reinforced by their dominant position in installing new water mains and service pipes. The customers for the installation of new water pipes are generally industrial or property developers. The same can apply to new sewer systems. The issues relating to water quality highlighted in competition in the market also apply to competition for new services.

The issue that confronts many water utilities and their customers in Europe is the manner in which incumbent utilities frequently have exclusive rights to provide and service new connections and the provision of the associated infrastructure. This often manifests itself in the operating companies being

provided with exclusive clauses in their licences or charters to operate. The question to raise is that if these services are technically considered to be monopolies and therefore not economically threatened, why would they need exclusivity rights?

The question of the right to supply not connected customers allows for some further thinking as this issue is something different from just the ancillary services. One could imagine that in a new area where property is being developed, a separate "private" network is constructed, then connected to the public network, managed independently from the public network from which it obtains bulk supplies and to which it sends effluents. In that sense, this separate "private" network would become a large consumer and would take care of its own maintenance. If the existing supplier has the right to impose individual connection obligations, this would not be possible. On the other hand, even if it had this right, one could wonder whether it is acceptable that the scope of the exclusive right extends to these kind of new developments.

Developers could choose to either install the infrastructure themselves or contract a third party company. They could plan the pipe laying and connection work to suit their site development programme. Developers could seek to contract a single organisation to install all utility services to a site. The water utility can bid to undertake this work but in competition with others. The developer (customer) benefits by procuring services from one service provider leading to cost savings being shared by all utility services. The risk of damage to existing infrastructure by repeated excavations is also reduced.

Once the works are complete and connected to the main network, incumbent water utilities take over responsibility for the new pipes – provided that the third party organisation has met all the necessary legal and technical specifications. The elements of this work that are contestable include: installing on-site mains, installing extensions, new service connections.

This principle could be extended further for any new network extensions or bulk water supplies that could be competitively procured by adapting BOOT (Build-Own-Operate-Techniques) techniques mentioned above. The attraction of this would be to possibly increase the opportunities for more innovative technical solutions and at more cost effective benefits than might otherwise be expected from monopolies which may be not so cost conscious.

5. IDENTIFICATION OF POTENTIAL CONTRIBUTION OF COMMUNITY COMPETITION RULES AND POLICY TO INCREASE COMPETITION IN THE WATER MARKETS.

This chapter will indicate possible restrictions to the different "types" of water markets, which have been set out in Chapter 4 above. It will then identify how EC competition law could be applied to the respective restrictions. As has been shown above in Chapter 4, various different kinds of competition are apparent in the water sector. In the following, issues of the competition for the market and competition in the market will be examined. The chapter will focus on only the most relevant market segments for the application of EC competition rules: the concession, drinking water supply and neighbouring markets. In addition, the study elaborates on selected state aid and merger issues which seem relevant in the water sector.

5.1 COMPETITION FOR THE MARKET (EXCLUSIVE RIGHTS TO PROVIDE THE SERVICE)

5.1.1 The relevant market

As has already been mentioned above in the "concession market", utility companies primarily compete for contracts to provide services.[21] The most frequent form of competition generally takes place when a granting authority (municipality, regional government, national government) decides to outsource the operating services to an undertaking (public or private) through concession contracts. In the following, "concession" will refer to any act constituting an economic activity attributable to a state whereby a public authority entrusts to a third party the total or partial management of services for which that authority would normally be responsible and for which the third party assumes the risk.[22] Also, this study will concern itself mainly with services concessions which have been granted for a long time period. The government or municipality retains the ownership of the physical and in some cases financial assets (such as reserves), while the contracts are for the operation of them. Community law does not provide for a common definition of concessions. As will be set out below in more detail, only Directive 93/37/EEC of 14 June 1993 concerning the coordination of procedures for the award of public works contracts[23] offers a definition of a concession in relation to "works concessions".

5.1.2 Main Competition Restrictions

A number of factual restrictions to the concession market exist. First, public authorities could pose a restriction to the concession market, e.g. the material and temporal scope of exclusive rights; non transparency of awarding/granting procedures, and state aid issues. For example, long term concession contracts by itself could create a dominant position of an undertaking and pose a restriction to the allocation of new concession contracts. Even so, long term concessions are deemed necessary to ensure investors return of their investments made into the network. In addition, non-transparency of procurement procedures centres an obstacle to the allocation of concession contracts and could thus

[21] See supra Chapter 4; competition could also take place when undertakings compete for obtaining the property of the assets.

[22] Commission Interpretative Communication on Concessions under Community Law, 12.04.2000, p.12.

[23] OJ L 199/54, 9.8.1993.

pose a restriction to the concession market. Furthermore, distortion of competition could be the result of a participation of state aided companies in the tendering procedures for concessions.[24]

Second, the conduct of companies itself could restrict competition in the concession market. To this end agreements between bidders, e.g. bid-rigging agreements and market allocation, and abuses of dominant position are conceivable restrictions. Bid-rigging can take various forms, but primarily, it refers to a bidding practice between undertakings with concerted price margins for services in the same bidding procedure for concessions. In such cases, these margins are set at a higher price than normal. In addition, in sophisticated system of bid-rigging collaborating undertakings allocate market quotas to its members. As a result, this practice leads to a distortion of competition in this market.

Also, multi-services companies are increasingly involved in the concession market. Their position of economic strength, as compared to single water providers, could be abused when bidding for concessions. This basis on the consideration that tendering procedures for concessions are time consuming and costly. In the bidding process for concessions, local water providers might have an advantage over other companies taking part in the tendering procedures, in particular, when they have previously provided the water services. For then they could abuse their market position, insider knowledge, and possibly corrupt practices to keep competition out of the region. In addition, the problem appears when such companies use their temporary dominance in a (local) market (e.g. electricity), acquired through (temporary) exclusive rights to gain a competitive advantage in another market. Furthermore, a problem appears when such companies misuse their economic strength by bidding under price.

The next section examines whether competition law can be applied to the restrictions of the market as noted above. In the concession market for water supply, public authorities either operate the services themselves or grant exclusive and special rights in favour of in most cases a single operator.

5.1.3 Applicability of Article 86EC: the Material and Temporal Scope of Exclusive Rights

The following will examine, whether concession contracts by itself could fall within the scope of application of Art. 86(1) ECT, Pursuant to Art. 86(1) ECT EC competition rules are applicable for public undertakings and undertakings to which Member States grant special or exclusive rights. To this end Member States "shall neither enact nor maintain in force any measure contrary to the rules contained in this Treaty, in particular to… Art. 81 to Art. 89 ECT".

The ECJ stated that creating a dominant position by the grant of an exclusive right is not as such incompatible with the Treaty, however, the Treaty nonetheless requires the Member States not to adopt or maintain in force any measure which might deprive those provisions of their effectiveness.[25] Hereby the ECJ examined whether concession contracts would be compatible with Art. 86 ECT. Thus, it will be considered whether concession agreements could fall within the scope of application of Art. 81 and 82 in conjunction with Art. 86(1) and (2) ECT. In addition, concession contracts could also be subject to Art. 10 ECT in conjunction with Articles 3 g) and 81/82 ECT, in particular, in cases where Member State's legislation expressly provides for concession contracts.[26] However, since this prohibition does not add anything of substance to the prohibition of Art. 86 ECT it will not be considered any further.

[24] See infra, Chapter 5.

[25] See C-320/91, *Corbeau* [1991] ECR I-2533, para. 11.

[26] See C-38/97, *Librandi* [1998] ECR I-5955, para. 26-27; C-66/86, *Ahmed Saeed*, [1989] ECR I-803, para. 58.

Services of economic interest

First of all, it is necessary to examine whether Art. 86(1) ECT is applicable on water concession contracts. Pursuant to Art. 86(1) ECT EC competition rules are applicable for public undertakings and undertakings to which Member States grant special[27] or exclusive rights.[28]

Art. 86(1) ECT concerns only undertakings for whose actions States must take special responsibility by reason of the influence which they may exert over such actions.[29] This includes public undertakings as well as municipalities.[30] Accordingly, as has been noted above water supply concession contracts fall within the scope of application of Art. 86(1) ECT.

In addition, the conditions of Art. 86 ECT refer only to services of economic interest.[31] As has been mentioned above this means that issues which are intrinsically prerogatives of the State, i.e. exercises of official authority such as ensuring internal and external security or the administration of justice, are excluded from the application of competition and internal market rules.[32]

Compatibility of creating a monopoly with provisions of Treaty

It is conceivable that creating a monopoly by granting an exclusive right, in particular a long-term concession contract, could be incompatible with the provisions of the Treaty. Yet, the mere fact that a Member State has created a dominant position by granting exclusive rights is not as such incompatible with the provisions of the Treaty, in particular Art. 82 ECT.[33] However, the manner in which such a monopoly is organised and exercised must not infringe the provisions of the Treaty, in particular the rules on competition.[34]. In the following only Art. 81 and 82 ECT are considered.

Art. 81(1) ECT

The granting of concession agreements is compatible with Art. 81(1) ECT because according to its own terms Art. 81(1) ECT is only applicable to agreements "between undertakings".[35] Art. 81 ECT does not apply to contracts for concessions concluded between communes acting in their capacity as public authority and undertakings entrusted with the operation of a public service.[36] Thus concessions could not be considered an agreement between "undertakings" and therefore Art. 81(1) ECT will not be further considered in this context.

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[27] "Special rights" means rights that are granted by a Member State to a limited number of undertakings, through any legislative, regulatory or administrative instrument to provide a service or undertake an activity, Art. 2(1)(g) Directive 2000/52/EC.

[28] "Exclusive rights" means rights that are granted by a Member State to one undertaking through any legislative, regulatory or administrative instrument, reserving it the right to provide a service or undertake an activity within a given geographical area, see Art. 2(1)(f) Directive 2000/52/EC.

[29] See C-188/80, C-189/80 and C-190/80 *France, Italy and United Kingdom v Commission* [1982] ECR I-2545, para. 4.

[30] See *Peter Stockenhuber*, in Grabitz/Hilf (eds.), *Das Recht der Europäischen Union* (Beck, 2000), at Art. 81, paras. 67-69.

[31] See supra, Chapter 4.2.

[32] See C-364/92, *Eurocontrol* [1994] ECR I-43, para. 4; see also Communication from the Commission on Services of General Interest in Europe, 20 September 2000, p. 13, para. 28 [hereinafter referred to as Communication on Services of General Interest].

[33] *Corbeau*, op. cit., footnote 5, para. 11.

[34] See C-260/89, *ERT* [1991] ECR I-1991, para. 12.

[35] Ibid., para. 29.

[36] See C-30/87, *Bodson* [1988] ECR I-2479, para. 3.

Art. 82 ECT

Art. 82 ECT declares that any abuse of a dominant position within the common market or in any substantial part of it as incompatible with the common market in so far as it may affect trade between Member States.

Dominant position

The ECJ has consistently held that an undertaking having a statutory monopoly over a substantial part of the common market may be regarded as having a dominant position within the meaning of Art. 82 ECT.[37] The mere fact that a Member State has created a dominant position by granting exclusive rights is not as such incompatible with the provisions of Art. 82 ECT.[38] The Treaty nonetheless requires the Member States not to adopt or maintain in force any measure which might deprive those provisions of their effectiveness.[39] Thus Art. 86(1) states that in the case of undertakings to which Member States grant special or exclusive rights, Member States are neither to enact nor to maintain in force any measure contrary to the rules contained in the Treaty with respect to competition.[40]

Abusive Practice

However, creating a dominant position by granting exclusive rights is incompatible with 86(1) ECT, if the undertaking in question, merely by exercising its exclusive rights, is led to abuse its dominant position or when such rights are liable to create a situation in which that undertaking is led to commit such abuses.[41] Pursuant to Art. 82 b) ECT such an abuse may in particular consist in limiting the provision of a service to the prejudice of those seeking to avail themselves of it. According to the ECJ in *Höfner* a Member State *inter alia* creates such a situation when the undertaking to which it grants an exclusive right is manifestly not in a position to satisfy the demand prevailing on the market for its kind.[42] Also, the effective pursuit of such activities by private companies must be rendered impossible by the maintenance in force of a statutory provision under which such activities are prohibited and non-observance of that prohibition renders the contracts concerned void.

Accordingly, from the *Höfner* case it follows that concession contracts in the water sector would be incompatible with Art. 86(1) ECT in the following circumstances: where a Member State is manifestly incapable of satisfying the demand prevailing on the water supply market and the provision of water supply by private companies is rendered impossible by the maintenance in force of a statutory provision under which such an activity is prohibited.

In addition, in the *Bodson* judgment the ECJ held that it is incompatible with Art. 82 ECT, if public authorities assist undertakings holding concessions to charge unfair prices by imposing such prices as a condition for concluding a contract for a concession.[43]

Affectation of Intra Community Trade

In particular, in a concession market in which large groups of undertakings are competing EU-wide for concessions, affectation of intra community trade by seems likely.[44]

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[37] *Corbeau*, op.cit., footnote 5, para. 9.

[38] Ibid, para. 11.

[39] Ibid., para. 11.

[40] Ibid., para. 12.

[41] See C-163/96, *Raso* [1998] ECR I-533, para. 27; C-41/90, *Höfner* [1991] ECR I-1979, para. 29.

[42] Ibid., para. 30.

[43] *Bodson*, op. cit., footnote 16, para. 5.

Public interest exemption pursuant to Art. 86(2) S. 1 ECT

Art. 86(1) ECT must be read in conjunction with Art. 86(2) ECT which permits the Member States to confer on undertakings (for the operation of services of general economic interest) exclusive rights which may hinder the application of EC competition rules in so far as restrictions on competition are necessary to ensure the performance of the particular tasks assigned to these undertakings.[45]

Thus the question which needs to be considered is "the extent to which a restriction on competition or even the exclusion of all competition from other economic operators is necessary in order to allow the holder of an exclusive right to perform its task of general economic interest and in particular to have the benefit of economically acceptable conditions".[46] Accordingly, it must be considered to which extent concession contracts are necessary to allow the operators to perform its tasks of general economic interest and to have the benefit of economically acceptable conditions.

Generally, it has been recognised by the ECJ that certain tasks of general economic interest may be conferred to undertakings by entrusting them with exclusive or special rights.[47] In *Commission v. France* the ECJ held that "it is sufficient that the application of those rules obstruct the performance in law or in fact of the special obligations incumbent upon that undertaking. It is not necessary that the survival of the undertaking itself be threatened".[48] Hereby, the economic conditions have to be taken into account as well as, in particular, the environmental regulations it has to obey.[49] To this end, the ECJ in *Corbeau* also held that such an exemption might be admitted in cases where undertakings providing a service of general economic interest can only offer a service at a uniform price, if profitable and unprofitable service could be accounted against each other.[50]

As regards the scope of specific services, the ECJ in *Corbeau* held, however, that for some specific services which are dissociable from the service of general interest which meet special needs of economic operators and which call for certain additional services not offered by the traditional service of general interest, an exclusion of competition is not justified.[51] Yet, in *BFI Holding* it held that in cases where certain needs in the general interest could not be rendered sufficiently by private companies, taking into account public health and the protection of the environment, the State may require that activity to be carried out by public authorities or over which it wishes to retain a decisive influence.[52]

In other words when considering the compatibility of (long term) concession contracts with Art. 86 ECT one should take into consideration the objective behind and the need for granting such exclusive rights in the water sector. Concession contracts in the water supply sector primarily aim at securing safe and sustainable water provision at economically acceptable conditions for the entrusted undertaking. In this connection, as has been stated by the ECJ in its *Corbeau* judgement, granting of exclusive rights help also ensuring that it will still be possible for the concessionaires to offset less profitable sectors against the profitable sectors. Thus, in particular, concession contracts appear to be an acceptable

[44] Ibid., para. 5.

[45] *Corbeau, op. cit., footnote 5*, para. 13.

[46] Ibid., para. 16.

[47] Höfner, op. cit., footnote 21, para. 2; Corbeau, op. cit., footnote 5, para. 8; Raso, op. cit., footnote 21, para. 23.

[48] See C-159/94, *Commission v. France* [1994] ECR I-5815, para. 59.

[49] See C-393/92, *Almelo* [1994] ECR I-1477, para. 49.

[50] *Corbeau*, op. cit., footnote 5, para. 15 et seq.

[51] Corbeau, op. cit., footnote 5, para. 19.

[52] See C-360/96, *Gemeente Arnhem and Gemeente Rheden v BFI Holding BV*, [1998] ECR I–6821, para. 52.

means of ensuring the operator that his investment in the water networks pays for itself. Less clear is, however, the right duration of the concession contracts. In this respect there are a number of conceivable approaches, e.g. re-tendering of concession type contracts after some years, taking into account the payback period and transaction costs of each re-tendering of concession contracts.[53]

Unnecessary distortions of trade, Art. 86(2) S. 2 ECT:

Pursuant to Art. 86(2) S. 2 ECT the exemption of Art. 86(2) S.1 is only in so far applicable as hereby the development of trade is not affected to such an extent as would be contrary to the interests of the Community.[54]

Art. 86(2) S. 2 ECT implies that the Member States need to reconcile interests of securing services of general interest with the Community's interest in further enhancing the internal market without a distortion of competition.[55] In the words of the Commission it has to be ensured that "restrictions of competition and limitations of the freedoms of the internal market do not exceed what is necessary to guarantee effective fulfilment of the mission".[56] The definition of the Communities interest has to be interpreted against the background of the aim and objectives of the Treaty and for the relevant sector in the light of the secondary law.[57] The ECJ in *Commission v Italian Republic* states that it is "...incumbent on the Commission to define, subject to review by the Court, the Community interest in relation to which the development of trade must be assessed."[58] By defining the Community interests the ECJ refers, for example, to secondary law sources.

However, whether affectation of the development of trade by concession contracts in the water supply market would be contrary to the interests of the Community is a political question.

Thus it appears that, depending on the element of financial risk, (long-term) concession contracts in the water supply market are compatible with Art. 86(1) in conjunction with Art. 86(2) ECT.

5.1.4 Applicability of Article 81 ECT

In the following it will be set out whether bid-rigging agreements could be made subject to Art. 81(1) ECT. Pursuant to Art. 81(1) ECT the relevant restriction in question must exist through an agreement between undertakings or decisions by associations of undertakings and concerted practices of an economic nature, which have as their object or effect the prevention, restriction or distortion of competition and consequently affect trade between Member States.

Bid-rigging agreements

Bid-rigging agreements are established amongst bidders to fix selling prices or trading conditions. They thus fall directly within the scope of application of Art. 81(1)(a) ECT. Bid-rigging can take various forms. In general it refers to undertakings collaborating in competitive tendering procedures for larger projects. For example, as has been the case in the so called "district heating pipe cartel", in Germany and Denmark the producers of pipes used for District Heating systems operated a system of bid-rigging:

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[53] See, for example, Art. 6(c) Proposal for a Regulation on action by Member States concerning public service requirements and the award of public service contracts in passenger transport by rail, road and inland waterway of 26.7.2000, COM(2000) 7 final.

[54] Commission's Communication on Services of General Interest, op. cit. footnote 11, p. 10, para. 19 et seq.

[55] See *Schwarze/von Burchard*, *EU-Kommentar* (Nomos, 2000), p. 1031.

[56] Commission´s Communication on Services of General Interest, , op. cit., p. 11, para. 23.

[57] See *Ingolf Pernice*, in Grabitz/Hilf (eds), *Kommentar zur Europäischen Union* (Beck, 1994) Art. 90 (ex), para. 58.

[58] See C-158/94, *Commission v. Italian Republic*, [1997] ECR I-5789, para. 65.

a cartel of undertakings was created in which the managing directors of six producers met regularly in secret meetings.[59] A uniform quota scheme was devised with allocated quotas and fixed prices. Also, a "favourite" was nominated that won each contract while the other cartel members put in higher offers. If any producer undercut the allocated favourite, it would be called to account and pressurised to with draw its bid.

The ECJ held that for the condition of an affect on intra-Community trade to be fulfilled it is only necessary to foresee such an affect with a sufficient degree of probability.[60] As has been seen in the District Heating pipes cartel large EU-wide cartels have been collaborating in the tendering procedures and have been found to systematically force out of business single competitors not participating in the cartel, thus distorting an EU-wide concession market.[61] Thus bid-rigging agreements can affect intra-Community trade.

In conclusion, Art. 81(1)(a) ECT is applicable on bid-rigging agreements.

5.1.5 Applicability of Article 82 ECT

The following will examine whether any of the aforementioned restrictions fall within the scope of application of Art. 82 ECT, in particular, constitute an abuse of a dominant position, and whether the abuse affects trade between Member States.

Dominant position

In the concession market, an undertaking may enjoy a dominant position in the context of competing for the granting of exclusive rights. As has already been mentioned undertakings benefiting from exclusive rights have, a dominant position that extends to the market where the exclusive right is exerted.[62] A different question is, however, as to what extent there are dominant firms at the moment of competing for the exclusive right. This market may be larger and competing firms may or may not have exclusive rights in the relevant product markets or geographical areas.

A dominant position is characterised "...by a position of economic strength enjoyed by an undertaking which enables it to hinder the maintenance of effective competition on the market by allowing it to behave to an appreciable extent independently of its competitors and its customers".[63] A dominant position could result from a combination of economic strength, stemming from technological know-how, cost advantages because of centralised common services and strong financial means. However, a position of economic strength must also enable the respective undertaking to effectively behave independently of its competitors, customers and consumers. To this end a number of factors should be taken into account. First, size might not necessarily be a decisive factor, particularly in small municipalities where local providers may be similarly well placed, given their experience compared to other providers. Second, there already exists a competition between other large foreign groups that might be interested in the concessions. Therefore, undertakings may not exercise their position of economic strength independently. Accordingly, it may be possible that in the concession market an undertaking holds a dominant position in the concession market as such (of economic strength), but it is not evident.

[59] See Commission Press release IP/98/917 of 21.10.1998.

[60] See C-215/216/96, *Bagnasco* [1999] ECR-135, para. 52.

[61] Commission Press release, op. cit., footnote 39..

[62] See supra, Chapter 1.3.1.2.2.1.

[63] See C-27/76, *United Brands* [1978] ECR I-207, para. 63/66; *Bodson*, op. cit., footnote 16, para. 4.

It seems more likely that a dominant position could be established by a cumulation of separate small scale monopolies (resulting from the granting of exclusive rights by municipalities) in different geographical areas. In *Bodson* the ECJ held that "...any anti-competitive behaviour on the part of a group of undertakings holding concessions which constitute an economic unit as defined in the case-law of the Court must be considered in the light of Article 86 of the Treaty".[64] With respect to the question whether a dominant position exists in these kinds the ECJ found it appropriate to determine, for one thing, the economic strength of the group of undertakings holding concessions on the relevant market, e.g. the concession market in the water sector.[65] That is to say that the size of the market share which is shielded from any competition at all as a result of the exclusive concession which is held by the group in the national market in other Member States must primarily be taken into consideration.[66] Also, the financial resources of the group need to be taken into consideration, in particular, when the group belongs to a powerful conglomerate of undertakings or groups of undertakings.[67]

Less clear is the borderline between competitive advantages and dominance of an undertaking. In particular, when an exclusive right to operate comes up for renewal, the question arises as to whether the existing concessionaire is in a dominant position or just benefits from a competitive advantage. Similarly, in a case that an exclusive right being tendered concerns a product market which is connected to a neighbouring product market in the same geographical area, the question arises whether the existing exclusive right holder for the neighbouring product market is in a dominant position or just benefits from a competitive advantage. Therefore establishing the distinction between competitive advantages and dominance is important.

Abuse

Where an undertaking holds a dominant position (of economic strength) it must also be evaluated whether it commits abuses in the relevant market.

- Predatory pricing

Art. 82 prohibits a dominant undertaking to eliminate a competitor by means of price (predatory pricing). The ECJ in its *AKZO* judgement regards prices below average variable costs as "abusive", if they are determined to be part of a plan to eliminate a competitor.[68] In these cases it is assumed that the dominant undertaking plans to eliminate a competitor and therefore they qualify as abuses.[69] Applied to the concession market in the water sector, abuse of a dominant position would primarily occur when the undertaking in question bids for concessions with prices below cost-efficiency (predatory pricing).[70]

- Restraining from Competition

Restraining from Competition has already been found abusive in the concession market, although only on a national level. The French Competition Council found that Suez and Vivendi were abused their dominant position by creating joint subsidiaries in certain areas and avoiding to compete against each

[64] *Bodson*, op. cit., footnote 16, para. 5 .

[65] Ibid., para. 5.

[66] Ibid., para. 5.

[67] Ibid..

[68] See C-62/86, *AKZO Chemie BV v Commission of the European Communities* [1991] ECR I-3359, paras. 71, 72.

[69] See C-333/94, *Tetra Pak II* [1996] ECR I-5951, para. 44.

[70] *AKZO*, op. cit., footnote 48, paras. 70-72.

other and the subsidiaries in those areas, thus limiting effectively the number of competitors and creating an anti-competitive effect.[71]

- The affectation of intra-Community trade

Predatory pricing and restraining from competition between certain undertakings which are friends with each other in the concession market could also restrict an EU-wide competition for concession agreements of undertakings and could thus affect intra-Community trade.

In conclusion, Art. 82 ECT seems applicable in the situation where an undertaking abuses his position of economic strength by predatory pricing in the concession market.

5.1.6 Applicability of Internal Market Rules: the non transparency of procedures awarding/granting exclusive rights to operate

An issue of predominant importance is the procedure to grant or award an exclusive or special right to operate. In cases of public service contracts, the awarding procedure might be subject to strict rules according to the respective procurement rules (e.g. Directives 93/37/EEC, 92/50/EEC and 93/38/EEC). In other cases, where the detailed procurement rules do not apply, the procedure would still be subject to the general principles of the EC Treaty on transparency, non discrimination etc. In any event, the principle of "call for competition" seems to apply whenever public authorities decide to entrust the provision of water services to a third party.

Accordingly, Internal Market legislation does not impose as such an obligation on public authorities to tender out the provision of water services to third parties. Under certain circumstances the authorities may decide to ensure the provision of water services entirely through their own services. In any event, the internal market rules, e.g. principle on transparency and non-discrimination, need to be obeyed whenever public authorities decide to entrust the provision of water services to a third party. Hereby is less clear, however, the classification of the so called inter-organic delegation between the concessionaire (i.e. the exclusive right holder) and the grantor which do not fall outside the administrative sphere of the delegating authority. In practice a grey area might exist when the delegating authority bears also the risk involved in the management of the construction and thus the contract could no longer be regarded as a concession.[72]

Thus the key question is the distinction between "public services contracts" and "concessions". In the following, first, the relevant public procurement rules will be shortly set out. Second, it will be shown that public authorities are subject to the Internal Market Rules whenever they decide to grant special or exclusive rights to undertakings.

Public Procurement Rules

The only EC legal instrument that offers a definition of a "concession" is Directive 93/37/EEC of 14 June 1993 concerning the coordination of procedures for the award of public works contracts[73]. It applies only to public works contracts and public works concessions.[74] Art. 1(a) defines public works

[71] See Decision No 2-D-44 of 11 July 2002, French Competition Council, available at: http://www.finances.gouv.fr/conseilconcurrence.

[72] Ibid., p. 7.

[73] OJ L 199/54, 9.8.1993.

[74] OJ L 199/54, 9.8.1993.

contracts as "contracts for pecuniary interest concluded in writing between a contractor and a contracting authority [...] which have as their object either the execution, or both the execution and design, of works related to one of the activities referred to in Annex II or a work [...]". Pursuant to Art. 1(d), a public works concession is "a contract of the same type as that indicated in (a) except for the fact that the consideration for the works to be carried out consists either solely in the right to exploit the construction or in this right together with payment". Water supply concessions are different from public works concession in that they have as their object the supply of water to the customers. Accordingly, concession contracts for water supply would not fall within the scope of application of Directive 93/37/EEC. Apart from Directive 93/37/EEC worth mentioning are the Directive 92/50/EEC[75] and Directive 93/38/EEC on contracts awarded by entities operating in the water, energy, transport and telecommunication sectors (Utilities Directive").[76] However, none of them offer any clear definition of a "concession", thus water supply concessions would not fall within the scope of application of the Directives. Accordingly, since none of the legal instruments offer a definition the key question remains, namely the differentiation between public service contracts and concessions.

The core characteristics of concessions are generally the same, regardless of their subject.[77] From the definition of the works concession and the ECJ judgement in *BFI Holding*[78] it could be followed that the "exploitation criterion" is vital for determining whether a service concession exists.[79] In *BFI Holding* the ECJ implicitly noted that there is a public service concession when the operator is remunerated on the basis of the right to operate the service. Accordingly, it seems that there is a concession "when the operator bears the risk involved in operating the service in question (establishing and exploiting the system), obtaining a significant part of revenue from the user, particularly by charging fees in any form".[80] According to the Commission a works concession is characterised when the contract is "principally concerned with the building of a structure on behalf of the grantor".[81] In contrast it regards a service concession when a concession contract mainly involves operating an already existing structure.[82]

The General Principles and Rules of the Internal Market

As has already been noted above the general principles and rules of the internal market apply nonetheless in cases public authority decide to entrust undertakings with concessions. To this end the ECJ in its *Telaustria* ruling noted that "...contracting entities concluding concession contracts are nonetheless bound to comply with the fundamental rules of the EC Treaty, in general, in particular, the principle of non-discrimination on the grounds of nationality."[83]

- Equality of Treatment

[75] OJ L 209/1, 24.7.1992.

[76] Commission Interpretative Communication on Concessions, op. cit., footnote 53, p. 23.

[77] Ibid., p. 9.

[78] *BFI Holding*, op. cit., footnote 32, para. 25.

[79] See supra, Chapter 2.3.1.

[80] Commission Interpretative Communication on Concessions, op. cit., footnote 53, p. 10.

[81] Ibid., p. 11.

[82] Ibid.

[83] See C-324/98 , *Telaustria* [2000] ECR I-10745, para. 60.

The principle of equality of treatment is one of the fundamental principles of community law.[84] The rules regarding equality of treatment of which Articles 43 and 49 ECT are a particular expression "forbid not only overt discriminations by reason of nationality [...] but all covert forms of discrimination which, by the application of other criteria of differentiation, lead in fact to the same result".[85] In addition, it requires that "...similar situations shall not be treated differently unless differentiation is objectively justified".[86] The ECJ in *Storebealt* held that this "principle of equal treatment of tenderers requires that the bidders comply with the tender specifications so as to ensure an objective comparison of the tenders submitted by the various tenderers".[87] In addition, the ECJ in *Commission v Belgium (Walloon Busses)* held that the awarding entities of tenders have to comply with the principle of the equal treatment of tenderers and the principle of transparency.[88] To this end, it held that these principles are impaired when awarding entities allow for selective subsequent changes in favour of a tenderer after the opening of tenders and/or deviate from the prescriptive requirements of the contract documents.[89] The Commission considers that from the ECJ's case law follows that the "...principle of open competition must be adhered to".[90] In particular, the principle of equality of treatment implies that all potential concessionaires have prior knowledge of the rules and they apply to every bidder similarly.[91]

Accordingly, the principle of equality of treatment appears to be infringed when the awarding entity awards concessions only to selected companies. Also, this is the case when the awarding entity allows for practices which deviate from the bidding procedures or which have been amended after the bidding procedure has been opened. In addition, a violation of this principle would also be constituted by allowing for alternative solutions when those originally have not been provided for and change the nature of the project. Furthermore, a violation would be constituted in case a grantor had been unable to specify the requirements in sufficiently precise technical terms and would selectively allow tenderers to draw up for a variety of bids.

- Principle of Non-discrimination/Transparency

The principle of non-discrimination is a specific enunciation of the principle of equality of treatment and is most prominently set out in Art. 6 ECT. In addition, it is incorporated, *inter alia*, into Art. 28, 43 and 49 ECT. Only recently, in *Telaustria* the ECJ held that the principle of non-discrimination implied, in particular, that an obligation of transparency exists in order to enable the contracting authority to satisfy itself that the principle has been complied with.[92] To this end it noted that the obligation of transparency is imposed on the contracting authority and consists of "...ensuring, for the benefit of any potential tenderer, a degree of advertising sufficient to enable the services market to be opened up to competition and the impartiality of procurement procedures to be reviewed".[93] The Commission is of the opinion that transparency can be ensured by any appropriate means, including advertising, depending on the particularities of the relevant sector. Furthermore, it is of the opinion that "...this type

[84] See C-810/79, *Überschär* [1980] ECR I-2747, para. 16.

[85] See C-330/91, *Commerzbank* [1993] ECR I-4017, para. 14.

[86] *Überschär*, op. cit., footnote 54, para. 16.

[87] C-243/89, *Storebaelt* [1993] ECR I-3353, para. 37.

[88] See C-87/94, *Walloon Buses* [1996] ECR I-2043, para. 2.

[89] Ibid., para. 95.

[90] Commission Interpretative Communication on Concessions, op. cit., footnote 53, pp. 15-16.

[91] Ibid.

[92] *Telaustria*, op. cit., footnote 63, para. 61.

[93] *Telaustria,* op. cit., footnote 63, para. 62.

of advertising generally contains the information necessary to enable potential concessionaires to decide whether they are interested in participating".[94] When applied to the water sector, this means that non-transparent procurement procedures for concessions would run contrary to the principle of non-discrimination.

- Principle of proportionality

The principle of proportionality is recognised by the ECJ as "...one of the general principles of Community law".[95] It requires that any measure chosen should be both necessary and appropriate in the light of the objectives sought.[96] This means that a Member State must not choose measures which go beyond what is necessary in relation to its objective. With respect to concessions this principle could therefore require contracting authorities to prevent it from defining excessive and disproportionate terms for the concession. Also, the principle could be set so as to reconcile competition and financial stability.[97] To this end the Commission argues that the principle requires an adequate setting of the duration of concessions so that competition is not limited beyond what is necessary to ensure that the investment is paid off and that there is a reasonable return on invested capital.[98]

- Exceptions provided for by the EC Treaty

It could be argued that restrictions rights of the above mentioned principles through the exercise of exclusive are expressly justified by the reasons stated in Articles 30, 45, 46 and 55 ECT. In particular, Art. 45 and 55 ECT, set out an exemption for the application of the freedom of establishment in order to provide services for activities which in that state are connected, even marginally, with the exercise of official authority. To this end the ECJ held in numerous judgements that "...Art. 45 of the Treaty must be interpreted in a manner which limits its scope to what is strictly necessary in order to safeguard the interests which it allows the Member States to protect".[99] Thus Art. 45 ECT covers only occupations which concern the direct and specific exercise of the sovereignty. So far Art. 45 has not been of great relevance in EC law as yet, since the ECJ has denied the application of Art. 45 permanently.[100] Accordingly, with respect to concession contracts in the water sector application of Art. 45 and 55 ECT does not seem evident.

[94] Commission Interpretative Communication on Concessions, op. cit., footnote 53, p. 17.

[95] See C-265/87, *Schräder* [1989] ECR I-2237, para. 21.

[96] *Ibid.*, p. 21.

[97] The Commission bases its opinion on the CFI in T-266/97, *Vlaamse Televisie Maatschappij NV*, [1999] II-2329, para. 108, see Commission Interpretative Communication on Concessions, op. cit., footnote 53, p. 18.

[98] *Ibid.*

[99] See C-2/74, *Reyners* [1974] ECR I-631, paras. 48-50.

[100] See *Albrecht Randelzhofer/Ulrich Forsthoff*, in Grabitz/Hilf, *Das Recht der Europäischen Union, Kommentar* (Beck, 2001,Art. 45, paras. 4-11.

5.2 COMPETITION IN THE MARKET

5.2.1 The relevant market

This section will be dealing with the restrictions of competition that are most likely to arise in markets characterised by some degree of opening to competition, such as common carriage and retail competition situations.[101]

Thus the focus for the application of competition policies and rules in this market segment is on the actual water service or retail providers or undertakings. Restrictions of competition that arise will be the result of undertaking behaviour rather than behaviour of public authorities. In addition, it will address a possible exploitative conduct towards final customers by the water or retail undertakings, including the holders of exclusive rights.

5.2.2. Main Competition Restrictions

The most relevant restrictions in these market segments include agreements between undertakings and or abusive conduct of undertakings holding a dominant position.

With respect to the former horizontal agreements, such as demarcation agreements (market allocation); and vertical agreements, such as exclusive supply/purchasing agreements could lead to market foreclosure.

As regards the latter, abusive behaviour of dominant undertakings, such as, exclusionary conduct, related in particular to access to the network issues (discrimination, essential facilities etc.) and exploitative conduct related in particular to the relations with the final customers (pricing policy, inefficient services) could restrict competition in this market.

The most relevant restriction of the retail market seems to be price-fixing agreements between bulk water suppliers and undertakings providing the retailing services. Such "resale price maintenance" between the bulk water and the retail supplier would have the effect to restrict the scope of competition for retail supplier. Also there might be agreements between bulk water supplier in which the price for sale of the water is too high, thus amounting to excessive pricing for the retail supplier.

5.2.3 Applicability of Article 81: Agreements between Undertakings

It is conceivable that horizontal agreements, such as demarcation agreements, between competitors that could have the effect of sharing markets or sources of supply and could fall within the scope of application of Art. 81(c) ECT. Also the entry of competitors could be prevented by foreclosing the markets trough vertical agreements between operators at different levels of the vertical water chain.

In particular, this could be achieved through long-term exclusive agreements between supplier and a distributor. In the past vertical agreements played a role in the electricity market. For example, in connection with the *Jahrhundertvertrag* the Commission found that vertical agreements between a group of electricity companies making long-term purchases of pre-formulated amounts of coal and the General Association of the German Coal Mining Industry were subject to Art. 81 (1) (Ex-Art. 85(1)) ECT.[102] It is worth noting that at that time, the electricity market was not liberalised in the EC, but this

[101] For the definition of these markets see supra, Chapters 4.4 to 4.6.

[102] See Decision 93/126/EEC of 22.12.1992; which is no longer in force. To this end, it seems worth noting that the agreements pursuant to Art. 81(1) (Ex-Art. 85(1)) met the conditions for exemption under Art. 81(3) (Ex-Art. 85(3)).

did not prevent the application of Article 81. Market foreclosure could also result of long-term exclusive tying by the incumbent operator of large (possibly industrial) customers. This kind of behaviour, while falling under Article 81(1) may also be caught by Article 82 (see below).

Those restrictions in which the incumbent supplier is possibly involved are likely to have the effect of hindering access of other competitors to the market.

To this end it is a number of different contractual possibilities are conceivable: for example, conclusion of a long-term exclusive agreement between a bulk water supplier and distributor/supplier or a water treatment station (or wastewater treatment station) and a water distributor/supplier (or a wastewater collector) is concluded. Equally, such agreements could be concluded between bulk water and retail suppliers.

In addition, price-fixing agreements between the monopoly water supplier and the retailer would fall within the scope of application of Art. 81(1)(a) ECT. In this connection it is conceivable that the monopoly water supplier and the retailer conclude resale price-fixing agreements to the detriment of the latter. By this resale price maintenance the retailer's scope for offering its services competitively on the market is limited.

The Affectation of Intra-Community Trade

It is not evident that horizontal or vertical agreements would directly affect intra-Community trade as understood in the normal sense because it is not possible to foresee a common carriage of water across Member States' borders with a sufficient degree of probability (in the case of retail competition, the affectation of intra-community trade would seem easier to establish).[103] However, in areas where the water network extends across the border it could be possible that horizontal or vertical agreements might have a market foreclosure effect which directly affects intra-Community trade. Also, it might be possible, that trade would be indirectly affected because water is a resource and an essential component of products in other sectors. Indirect affectation would only seem possible when it is appreciable. It is conceivable that this is the case when large users are involved.

Conclusion

In conclusion, horizontal and vertical agreements as mentioned above could fall within the scope of application of Art. 81 ECT, provided that thereby intra-Community trade is affected.

5.2.4 Application of Article 82 ECT : Abusive Conduct

Art. 82 ECT declares any abuse of a dominant position within the common market or in any substantial part of it as incompatible with the common market in so far as it may affect trade between Member States.

Dominant position

In the situation of common carriage or retail competition, the dominant position will most likely relate to the control of the water chain. To this end it is conceivable that undertakings which conduct either the distribution or collection network, the treatment stations or the access to bulk water having a dominant position.[104] To this end, a dominant position could also be determined by the economic strength of a (possibly European) group of water providers, which could constitute a substantial part of the Common Market by an accumulation of a large number of exclusive areas. It is worth noting that these undertakings belong to one group so that there is no competition taking place between them.

[103] *Bagnasco,* op. cit., footnote 40, paras. 50 et seq.

[104] For the definition, see *United Brands*, op. cit., footnote 43, para. 63/66 and *Bodson,* op. cit., footnote 16, para. 26.

As has been mentioned above a dominant position could be the result from the granting of an exclusive or special right, for example, a concession to an undertaking by a public authority. In this respect the ECJ in *Höfner* held that "an undertaking vested with a legal monopoly may be regarded as occupying a dominant position".[105] In addition, the monopoly must extend to a substantial part of the Common Market.[106]

Abuse of Dominant Position

Abuse of a dominant position can take various forms. However, there are two main groups relevant: exclusionary conduct and exploitative conduct. The former abusive conduct could consist of abuses aiming at excluding competitors from the market, e.g. by tying buyers, preventing access, in particular, in connection with common carriage or pricing policy (predatory pricing). The latter abusive practice could relate to the relations with the final customers, in particular, excessive pricing or provision of inefficient services.

- Exclusive Agreements

Exclusive supply or service agreements by which a dominant undertaking ties buyers – even if it does so at their request – by an obligation or promise on their part to obtain all or most of their requirements from that undertaking could be abusive.[107] This practice has been experienced, e.g. in the gas market, where a dominant gas supply company and market leader in the electricity business concluded exclusive contracts for the purpose of gas for electricity generation. Such contracts could not only raise barriers for potential entrants it could also lead to the segmentation of the relevant (in this case gas) markets to the benefit of the dominant firm.[108] Equally, in the water supply market it is conceivable that a water providing company concludes exclusive buying agreements with service companies, e.g. bulk water suppliers or treatment companies, or that it ties the end users. In the retail market this could be the case when a monopoly water supply company concludes exclusive agreements with the retail service companies which prevents them from competition in other local/regional markets.

- Discriminatory Practice

Also, the practice of applying dissimilar conditions to equivalent transactions of selected trading parties, thereby placing some of them at a competitive disadvantage, may constitute an abuse of a dominant position.[109] In the water supply market abusive policy of discrimination may be apparent if a water supply or retailing company is selectively put to a competitive disadvantage in relation to pricing or services offered and the discrimination may not be justified. To this end unjustified discrimination would be conceivable when access seeker to the water networks for common carriage would be put at a competitive disadvantage by the incumbent.

- Essential Facilities

The denial of access to the water networks by an operator holding an exclusive right to operate the networks may constitute an abuse of a dominant position. To this end the scenario is conceivable that an external water provider seeks access to the dominated water supply market of the incumbent. In this respect this scenario may already be qualified as abusive on the grounds of unjustified discriminatory

[105] *Höfner*, op. cit., footnote 21, para. 29.

[106] Ibid., para. 28 and see C-322/81, *Michelin* [1983] ECR I-3461, para. 28.

[107] *AKZO Chemie BV,* op. cit., footnote 48, , para. 149.

[108] See Commission Press release IP/00/297 of 27.03.2000, "Commission closes investigation on Spanish company 'Gas Natural'".

[109] *United Brands*, op. cit., footnote 43, paras. 227-233.

practice pursuant to Art. 82.[110] In addition, it is also argued that the "essential facilities" doctrine could be employed to facilitate access to electricity/telecommunication networks.[111] Likewise, an application of the "essential facilities" doctrine with respect to water networks may argued. It is widely understood that the "essential facilities" doctrine concerns a refusal to grant access to a related market for the purposes of a service where no other operator has been given access by the access provider to operate on that service market. Such refusal to give competitors access to the facility is seen as abusive.[112]

The ECJ has not expressly recognised the "essential facilities" doctrine as yet.[113] However, in connection to the refusal to supply a rival undertaking with services indispensable to carrying on its business in the *Bronner* Case[114] it has indicated that for Art. 82 to apply three conditions had to be met: a) the refusal of the service is likely to eliminate all competition in the respective market on the part of the access seeker; (b) such refusal is incapable of being objectively justified, and (c) the service itself is indispensable to carrying on the applicant's business inasmuch as there is no actual or potential substitute for that service.

With respect to the water supply market this means that the application of the essential facilities could be conceivable if the target market is the supply of water and the related market concerned is the transport of water. That is to say that the refusal of the incumbent to grant access to the water networks would have the result of eliminating all competition in the water supply market. In addition, access to the water networks seems indispensable for the providing water supply. However, whether such refusal is capable of being objectively justified seems debatable.

- Predatory Pricing

Art. 82 ECT also prohibits a dominant undertaking to eliminate a competitor by means of price (predatory pricing). The ECJ in its *AKZO* judgement regards prices below average variable costs as abusive, if they are determined as part of a plan for eliminating a competitor.[115] In the these cases it is assumed that the dominant undertaking plans to eliminate a competitor.[116] Also, prices below average total costs (fix costs and variable costs) are also regarded as abusive if they are part of a plan for eliminating a competitor. In these cases proof of the intention to eliminate a competitor has to be established separately.[117] Applied to the water sector, in particular common carriage, this means that predatory pricing by a water service company below average variable/total costs is abusive, provided that it is a part of a plan to eliminate a competitor. In general, however, uniform tariffs within one supply area prevent the incumbent from predatory pricing. Thus in practice it would rather be the access seeker to the network who would offer services below average variable/total costs.

[110] See Notice on the application of the competition rules to access agreements in the telecommunications sector, in Telecom., paras. 85-86, OJ C 265, 22.08.1998, p. 2-28 [hereinafter referred to as Telecom notice].

[111] See *Christian Jung*, in Grabitz/Hilf, *Das Recht der Europäischen Union* (Beck, 2001) Art. 82, para. 223; for the telecommunication sector, see Telecom notice, op. cit., footnote 90, paras. 87-98.

[112] See *Mats A. Bergman*, "The Brunner Case- A Turning Point for the Essential Facilities Doctrine?", (2000) E.C.L.R., p. 59.

[113] See *Jung, Christian*, op. cit., footnote 91, para. 223.

[114] See C-7/97, *Oscar Bronner v Mediaprint*, [1998] ECR I-7791, para. 41.

[115] *AKZO Chemie BV*, op. cit., footnote 48,, paras. 71, 72.

[116] *Tetra Pak II*, op. cit., footnote 49, para. 44.

[117] *AKZO Chemie BV*, op cit., footnote 48, paras. 71, 72.

- Inefficient Services/ Excessive Pricing

The provision of inefficient services by the incumbent is a case when the abuse consists of limiting the provision of a service. A situation may arise in which the demand prevailing on the market for the respective kind of activities is not properly satisfied by the incumbent undertaking. Also as has already been mentioned above, this situation can arise in the context that a water operator benefits from an exclusive right, and the pursuit of activities of competitors (private companies) are rendered impossible by the maintenance in force of a statutory provision under which such activities by private companies are prohibited and non-observance of that prohibition renders the concerned contracts void.[118] In the water sector, inefficient services could be created either by failure or bad performance of water supply, e.g. lack of adequate water pressure ("water hammers").

Also, it is worth noting that charging excessive prices of final customers which have no reasonable relation to the economic value of the product may constitute an abuse under Art. 82,[119] even if the prices were determined by specifications forming a part of a concession.[120] This would equally apply to the retailing market where it is also conceivable that the monopoly water provider charges the retailer excessive prices which have no reasonable relation to the economic value of the product and are thus abusive, even if the prices were determined by specifications forming a part of a license.

Conclusion

The abuses must at least be capable of having an appreciable effect on trade between Member States.[121] In this connection what has been mentioned above in relation to Art. 81 ECT holds equally true for the application of Art. 82 ECT.

In the water supply market it is conceivable to apply Art. 81(1) ECT on certain horizontal and vertical agreements and Art. 82 ECT on different exclusionary and exploitative abuses of a dominant position of a water supply undertaking, provided that there may be an appreciable effect on intra community trade.

5.3 NEIGHBOURING MARKETS

Competition is also taking place in neighbouring markets to the water supply market, e.g. in the segment of upstream supply of goods and services. This refers to the market of services of financing, engineering and construction of water networks. In this market segment the water or wastewater companies are the customers of the services. The market relies on the transparent application of procurement rules to ensure non-discriminatory award of services. Generally, several limitations to this market could occur. In particular, services could be rendered "in-house", i.e. such services will be awarded within the same water or waste water company and without the application of public procurement rules. Also, service jobs could be awarded to other companies without the full compliance with the EC procurement rules.

In this market segment procurement rules, in particular, the procurement Directives 93/37/EEC, 93/38/EEC, 92/50EEC are applicable.[122] Also, there may be scope for application of Art. 81(1) and 82 ECT. However, since the competition generally takes place outside the "core" activities of the water service provision they are not of the central concern for this study.

[118] *Höfner*, op. cit., footnote 21, para. 31.

[119] *United Brands*, op. cit., footnote 43.

[120] *Bodson*, op. cit., footnote 16, para. 4.

[121] *Bagnasco*, op. cit., footnote 40, paras. 47-48.

[122] See also supra Chapter 2.3.1.

5.4 MERGER ISSUES

With regard to legal monopolies and merger issues a particular case that, only recently, gave rise to some debate seems worth mentioning: undertakings holding a dominant position trough a legal monopoly extending its market position to a separate product/geographical market through merger or acquisition. To this end the question arose whether it is compatible with Art. 82 ECT, if an undertaking entrusted with public interest services acquires control over undertakings in competitive markets using the profits obtained from its legal monopoly.

First, the Court of First Instance in *UPS Europe* held that "the mere fact that an exclusive right is granted to an undertaking in order to guarantee that it provides a service of general economic interest does not preclude that undertaking from earning profits from the activities reserved to it or from extending its activities into non-reserved areas".[123] However, it held, that any evidence which shows that the funds used for the acquisition in question derived from abusive practices in the reserved market gives rise to an obligation on the Commission to examine the source of those funds and could constitute an infringement of Article 82 ECT.[124]

5.5 STATE AID ISSUES

5.5.1 Funding of Public Services

Recently, the issue arose that private undertakings in the public utilities sector, which had been transformed from a public to a private enterprise, benefited from certain laws either allowing them to take loans or providing for income tax exemptions.[125] In this context, State aid might bear distortional effects on the market and are therefore -according to Art. 87 (1), 86 (1) ECT- incompatible with the Common Market, if they are indeed found to distort competition or threaten to do so.

It is, for example, conceivable that, by bolstering their financial resources, the companies are being enabled to better position themselves in a tender or concession awarding procedure, e.g. by being more flexible in the pricing of their offer. In addition, state aid can help such companies to expand their field of operation more easily into other markets and geographic areas. Furthermore, state aid might make capital investment particularly interesting, as it gives the company more resources to distribute to investors in the form of dividends, thus distorting the competition in the capital market.[126]

With regard to the question of funding of services of general economic interest some authors argue that the current legal situation is insufficient.[127] The question arose when the CFI in *Ferring* revised the prerogative of the Commission to assess the legality of the respective funding as compatible with the ECT, pursuant to Art. 86 ECT, in particular 86(2)ECT.[128] Accordingly, the CFI qualified public funding of services of general economic interest not as state aid but rather a compensation of the service that the undertaking provides in the general interest, provided that the compensation does not exceed the net additional costs of the general service mission.[129] As a consequence of this ruling, the general

[123] See T-175/99, *UPS Europe vs Commission* [2002] ECR II-1915, para. 51.

[124] Ibid., para. 61.

[125] See *Davide Grespan*, Competition Policy Newsletter, No. 3, October 2002, pp. 17-23, p. 17; see also C-730/79, *Philip Morris judgement* [1980] ECR I-2671, para. 11.

[126] Ibid., p. 18.

[127] Ibid., p. 22.

[128] See C-53/00 *Ferring SA v Agence centrale des organismes de securite sociale* (ACOSS), [2001] ECR I-9067

[129] See *Jörg Gundel*, "Staatliche Ausgleichszahlungen für Dienstleistungen von allgemeinem wirtschaftlichen Interesse: Zum Verhältnis zwischen Art. 82 Abs. 2 EGV und dem EG-Beihilferecht, RIW 2002, p. 225.

notification rules pursuant to Art. 88 ECT are no longer applicable. It is therefore difficult for the Commission to learn of possible infringements. In addition, any national authority may be asked to check the proportionality of the compensation at the same time as the Commission, possibly applying different economic criteria to assess a violation of Art. 87 (1). This situation is aggravated by the danger that each Member State might base its assessment on a different set of criteria.[130]

Also, the ruling implies that there is no need to look at a possible justification according to Art. 86(2) ECT anymore.[131] For if the funding is proportionate then there is not state aid, whereas if the funding is found excessive, there is no scope for application of Art. 86(2) ECT anymore.[132]

In summary, against the background of an ever growing competitive character in this sector there is a clear need for transparency, for it aims at avoiding discrimination, cross-subsidisation and distortion of competition as a result of State aid.

5.5.2 Transparency Directive 2000/52/EC

It is in this context that the Directive 80/723/EEC[133] on the transparency of financial relations between Member States and public undertakings as amended by Directive 2000/52/EC[134] (Transparency Directive) could ensure that the competition rules of the ECT are fairly applied by securing the necessary financial information of undertakings which have been entrusted with the operation of services of general economic interests. It aims at ensuring the application of the provisions of Art. 86 ECT. Its objective is to acquire detailed data about the internal financial and organisational structure of public undertakings and undertakings to which Member States grant special or exclusive rights. In particular, it aims at acquiring data about separate and reliable accounts relating to activities which include, on the one hand, all products or services in respect of which a special or exclusive right is granted to an undertaking or all services with which an undertaking is entrusted and, on the other hand, each other separate product or service in respect of which the undertaking is active.

[130] *Grespan*, op. cit., footnote 4, p. 22.

[131] Ibid..

[132] Ibid..

[133] OJ L 195, 29.7.1980, p. 35.

[134] OJ L 254. 12-10.1993, p. 16.

6. POSSIBLE REGULATORY SOLUTIONS TO SUPPLEMENT OR COMPLEMENT THE APPLICATION OF COMPETITION RULES

6.1 INTRODUCTION

Chapter 4 identified possible models for applying competition in the water sector. Within the current structure of the industry in Europe, mainly a municipal responsibility with a large variety of service providing entities in most states, it is likely that some of these models would be unachievable without significant reform of the sector. This reform would have impacts not only for the water and wastewater service providers themselves, but also for the political and governance structures of many of the municipalities within member states.

Public service responsibilities are variously allocated by member states between national and one or more other tiers of government. With the exception of the UK, the responsibilities for water and wastewater services exist with municipalities and outside environmental regulation, the main regulatory influence also takes place at this municipality level. Just as national legislation provides the framework for municipalities to decide the manner in which water and wastewater services are provided, so this same framework allows significant discretion for the manner in which regulation is conducted. For example in Germany, some municipalities require higher standards of drinking water or effluent discharge than that recommended in national law. This devolution of responsibility both for the service and regulation means that it has been consistently difficult for national authorities to collect accurate and comparable information, on for example prices.

The optimal balance between the different tiers depends on the characteristics of the utility sector, jurisdiction units and the regulatory issues in question. In the water and wastewater sector utilities generally operate solely through local distribution networks. However they will often abstract water from resources that are shared with other local networks. Here the regulators and indeed the provider are likely to be at a higher, regional tier of government. A similar split exists between the local wastewater collection network and its regulator at the municipal level, and the regulator of discharges to the environment, which is more likely to function at a regional, national or river basin level.

The regulatory issues that seem to be relevant are:

- the water sector is regulated and needs to be regulated;
- regulation and competition are not contradictory and may complement/supplement each other;
- competition rules have a limited scope and cannot deal with all the issues identified in chapter 4, in particular the behaviour of public authorities and the legislative measures;
- proper regulation could have a positive impact in the market by playing a greater role in advocating for customer interests and for greater efficiency.

This chapter looks at other mechanisms, which can be used to encourage a more competition oriented environment for the water and wastewater sector in Europe. The chapter focuses on regulatory mechanisms that could be applied.

All industries are regulated to different degrees, depending on conditions of market competition and community interest. The water and wastewater industry needs to be highly regulated given the impact that its operations can have on public health and the environment. In addition, being in the main undertakers of a natural monopoly, there is a need to protect the customer's interests.

It might be that the proper and full application of existing EC rules would have an important role to play in providing further competitive influence on the water and wastewater sector in Europe. For this to happen the current regulatory authorities, particularly those that represent customer interests and those that provide price regulation, would need to play an important role. This may require the legislative framework that defines their roles and responsibilities to more clearly empower them to implement decisions based upon EC competition rules.

The challenges for regulatory authorities to become such "advocators" of for the customer in water and wastewater sector are significant. This is because in many member states (maybe most) the language of competition appears to conflict with notions of public service and differing interpretations of the application of EC competition rules in sectors that are services for the general economic interest. Also the language of "competition" has been inherently confused and entwined with the language of "privatisation" and "liberalisation".

The issues and the language of competition is distinct and is about processes and structures, and regulation that supports efficiency, high quality of services and competitive prices.

Regulatory solutions in this context not only covers formal processes of regulatory that involve rules and acts of enforcement, but also processes of providing information to customers. The chapter describes the main elements of regulation pertinent in the water and wastewater sector. It then makes some general conclusions for appropriate application in the current industry structure in Europe.

6.2 WATER SECTOR REGULATION

Key objectives of regulation in the water and wastewater sector are to:

- protect the environment from over-exploitation and in particular to establish fair allocation of water resources between competing users;
- ensure public access to good quality drinking water to protect public health – a universal service obligation
- protect customer interests by establishing acceptable levels of service and price and efficient operations, for which they would need to provide incentives for competition (for example in ensuring competitive tenders are conducted properly).

In the areas of environmental protection and drinking water quality, the regulation of a water utility with private sector involvement will be the same as for a public sector water utility. Although, where private capital is involved in water service provision, special care must be taken to avoid private economic interests achieving dominating influence over decisions.

In the areas of customer service and service pricing some additional regulation may be necessary to ensure "fair" rates and an acceptable level of service to customers are provided by the operator. Customers should expect an acceptable level of service from their water and wastewater utilities. This level of service should be clearly stated, and the actual service provided should be monitored. In the past, apart from monitoring drinking water and effluent qualities, there has been little attention paid to the service standards provided to customers. If there has the information is generally not within the public domain, and certainly not analysed on a comparative basis.

If a competing operator is to provide services to customers it is important, as part of the relationship, that the level of service to be provided is established at the outset. Otherwise there is little recourse for poor performance.

Pricing of service is a complex issue. However some form of regulation is necessary to assess that the rates to customers are "fair" given the framework of rate setting. The key is balancing the 'cost and quality'.

Regulation in the water sector generally covers the following areas, which will be looked at in more detail in the next section:

- Prices

Regulation of prices is necessary to ensure that the service provider does not abuse its monopoly position.

- Levels of service and operating costs

In order to assess appropriate price levels, the regulator needs to know what levels of service the utility is providing. The regulator therefore monitors levels of service and estimates the corresponding costs.

- Investment

Many of the assets utilised in the water industry have very long lives (pipes may last 100 years or more), so it is essential that adequate maintenance is carried out to preserve them for future generations of consumers. As well as providing new assets to extend or improve services, the utility invests in the maintenance of existing assets. The regulator ensures that prices provide sufficient revenue to finance this investment but, equally, the regulator ensures that customers do not pay too much for this.

- Customer protection

In a monopoly industry dissatisfied customers cannot choose an alternative supplier, so they have very little power to force the utility to act on any dispute. There is thus a need for a body that can act in support of customers. This body must have sufficient authority to enable it to influence the utility. Such authority could be provided by making it a government body, responsible for all consumer industry relations. This is the case in most member states under Consumer Protection legislation.

- Drinking water quality

Since good quality water is critical to the health of consumers, water quality standards must be established and utility performance should be monitored. Drinking water standards are universal and should be set by a national organisation in accordance with international best practice. Legal standards for drinking water quality may be established at State or Federal level or municipal level.

Where compliance with the standards affects prices, monitoring is also the responsibility of a regulator but, since public health issues are involved, this responsibility is normally given to a separate body which would work closely with the regulator for customer services.

- Environmental protection

Since water utilities take their raw water from rivers and underground aquifers, and also use the rivers for the final disposal of treated wastewater, it is essential that the utilities' activities do not damage this environment. Standards for abstraction and discharge must be established and performance monitored.

As with drinking water quality, where compliance affects prices, monitoring should be the responsibility of the regulator. However, the water service provider is not the only body with water abstraction needs, nor the only body with the potential for causing harm to the aquatic environment. Industrial organisations may need to abstract water and may discharge their effluent to the rivers, and other discharges can be due to highway drainage and run-off (land-drainage) from farms, etc.

Environmental regulation is normally given to an independent national entity. This body would be responsible for granting abstraction and discharge licences, setting environmental quality standards and monitoring compliance.

Every regulator in a utility sector; that is a public service; that is regarded by political entities as a service of general interest; and that is required to be provided on a universal basis, will operate in difficult circumstance. These include:

- An environment characterised by severe information problems for customers. Probably the most significant of which relates to the ability to obtain reliable information from the regulated entities. But well informed decisions also require inputs from a broad range of consumers, who individually may have limited incentives to provide full or accurate information.
- An environment characterised by significant political involvement or interference, which will often have an interest which is short term. Counter to this is the importance of the political process to influence the delivery of essential public services; hence the ambiguity that remains in the debates that exist in the water sector as to whether the provision of the service is or is not and economic activity.
- Pressures or undue influences from regulated firms (often owned by public authorities) which will have incentives to "capture" the regulator or influence its independence, and thus ensure the balance between consumer and supplier interests are struck in their favour.
- Pressures from other regulators, maybe with conflicting interests to safeguard. In the water sector this is often characterised between environmental or health regulators seeking to increase standards as against "economic" regulators pressuring to keep prices low.

6.3 ROLE OF ECONOMIC REGULATORS

6.3.1 General Issues

The activities of economic and customer service regulation are conducted in one form or another by most European countries, be this independent bodies such as the Office for Water Services in England and Wales, the Water Industry Commissioner in Scotland, Regional regulatory bodies such as that appointed in Lazio, Italy, or by the municipalities through regulation and or through contracts with the operating utilities, as in Germany, France and most other member states. Many of the functions of price regulation are stipulated in law, such as the requirement in Sweden for utilities not to make profits. In Germany the basis for calculating tariffs is prescribed by law and in France by contract with the operating companies.

The pertinent issue remains as to what extent regulators that undertake general customer protection or price regulation undertake their tasks with a view to ensuring that the utilities are operating at optimal efficiency as they would need to be doing in a competitive market.

Regulation of the water and wastewater utilities, as with telecommunications, electricity and gas, aims to achieve a couple of objectives;

- To deal with market failures associated with the service provision – such as monopoly position and imperfect information.
- Create an operations and investment environment that focuses on customers and operates in a transparent and proportionate manner.

Effective regulation in these areas requires them to;

- Control prices

  The control of prices is a central regulatory function, generally undertaken by municipal authorities across member states with certain legal parameters set at national level. There nevertheless remains a significant degree of municipal discretion in setting prices and in interpreting costs

  Broadly, regulators need to understand the company's cost structure in order to decide on the level of prices necessary to cover all the costs. In general terms, the costs can be divided between operational costs, capital costs and the cost of financing capital investment (equity/bond finance). Regulators collect, or are provided with, details of the company's operating costs, any capital investments made and the value of the assets utilised by the business. After analysing this information, regulators will be in a position to determine the tariff level to be allowed. This process is undertaken at defined times – annually or at longer intervals with most concession type contracts.

  There are two principal methods by which tariffs can be set: "Rate of return" and "price cap". Rate of return regulation allows the service provider to set prices at levels which provide a specified return on investment, whilst price cap regulation allows the service provider to raise prices up to a specified limit.

  Rate of return regulation ensures that service providers do not make excessive profits but it provides few incentives to control costs. The regulator reviews the company's cost structure and decides whether it is providing the services cost-effectively. If the company is efficient, customers will benefit from low prices. If the regulator's view is that the company is not efficient, it can impose penalties.

  Price cap regulation sets an upper limit on prices and allows the service provider to increase his profits by reducing costs. The regulator reviews the company's cost structure and decides on appropriate price levels. To encourage investment in efficiency improvements, the company can be allowed to retain the higher profit margin for a significant period of time before a lower price cap is imposed. There is thus a time lag between efficiency improvements and when customers benefit from lower prices.

Rate of return regulation: advantages and disadvantages

- Rate of return on investments is guaranteed, but also limited, at a pre-specified level.
- Tariff changes are unpredictable.
- Encourages excessive investments.
- The operator has little incentive to reduce operating costs.
- Reviews are complex and impose high costs on all sides.

Price cap regulation: advantages and disadvantages

- Profits (rate of return) are not restricted. Operator may keep any profits it makes for a specified period, after which fees are renegotiated.
- The operator is motivated to improve its operational efficiency because it can retain the benefits of efficiency improvements, at least until tariffs are renegotiated.
- During renegotiations, the regulator must try to capture some of the operator's efficiency gains for the consumer, through reduced operator fees or improved services.
- Fee and tariff changes are regular and predictable.

- The concept is simple: fee and tariff adjustments are linked to an inflation index which is understood by consumers.
- Discourages investments: In an effort to cut costs and increase its profits, a concessionaire or private owner may cut corners on investments. A lease contractor or concessionaire may try to cut corners on maintenance. Maintenance and investment programs must be agreed in advance and monitored.
- However, if, at any time, profits seem excessive and there is public pressure to reduce them, the regulator is likely to call for re-negotiation of the tariff. In this sense, the price-cap approach tends toward rate-of-return regulation.

- Monitor levels of service and operating costs

The service provider's performance is monitored against appropriate standards. These "Levels of Service" standards may be specified in a concession contract between the service provider and the body granting the concession, or in a statement of requirements produced by a regulator or the municipality. Some standards will be mandatory (eg. water quality and environmental protection) while others may vary according to customer preferences.

If performance falls below the required levels of service, the regulator may impose financial penalties in the form of refunds of water charges to customers.

Standards for levels of service cover all (or most) of the following:

Water	Sewerage	General
Coverage of water supply	Coverage of sewerage and sewage treatment	Customer relations
Water quality	Frequency of flooding	Times taken to respond to problems
Water pressure	Environmental discharges	Price information
Interruptions to supply	Odour	
Leakage		

The details listed above cover the requirements for a vertically integrated industry where a single organisation is responsible for the entire delivery chain, from water abstraction via the consumer to effluent disposal. If this structure were to be separated, with different elements of the delivery chain provided by different suppliers, then additional data would be required to enable the regulator to assess the services provided at each stage in the chain.

Most of the data will be submitted by the utility, but the regulator may collect some (such as complaints from customers) and some may be supplied by other regulators (such as compliance with the water quality and environmental discharge standards). Technical and financial audits are carried out on the data collected to confirm its accuracy.

The specification of data requirements and the quality of the audit are critical to effective regulation because of *informational asymmetry* - the utility will always have more information than the regulator. Therefore the company always has a better understanding of its business and is better able to control negotiations with the regulator.

- Monitor capital investment and activity

  Regulators determine whether the service provider is making adequate investments in asset renewal in order to maintain the overall condition of the assets. Some concession contracts may specify an amount of capital investment the service provider must make during the course of the contract.

  Regulators therefore collect details of investments in new assets and in the maintenance of the existing assets. This information is accompanied by an assessment of the overall condition of the assets and their serviceability (their overall ability to perform the functions required). Regulators may also wish to obtain details of the percentage of assets renewed or replaced in order to determine whether this investment is being carried out efficiently.

- Protect consumers

  The task of consumer protection may be included within the sector regulator's responsibilities. If so, the regulator establishes channels of communication whereby consumers can be advised of their rights and can complain if they have a problem. The regulator would then pursue the matter on the customer's behalf. Regulators often have the power to ensure that the utility compensates customers if appropriate.

6.3.2 Tariff Setting and Control

There are three principal reasons for regulation to affect tariffs:

The first is the downward pressure on tariffs exerted by the regulator, without whom the utility service provider would be in a better position to increase tariffs without being called to account. The regulator may also be required to implement government policy in respect of subsidies for disadvantaged customers. This may give rise to lower prices for some customers and higher prices for others.

The second is the upward pressure on tariffs due to the cost of levels of service improvements which effective quality regulation should achieve. It should be the regulator's objective to ensure that these costs are met by improvements in the service provider's efficiency, but this may not always be possible.

The third is the cost of regulation itself. If the regulators are funded by levies on the service providers, this cost is likely to be passed directly to customers.

Price increases can be minimised by providing low cost regulation and applying realistic levels of service. But the most significant effect on prices can be achieved through efficiency improvements by the service provider. This requires effective regulation to ensure, first, that efficiency benefits are achieved and, second, that they are passed to customers.

To assure financial viability, tariffs should be set at levels which reflect the full cost of providing water services including the cost of efficient operations, an allowance for depreciation of assets and a fair return on assets. The tariff structure should promote conservation of scarce resources (e.g., through a charge for extraction of water resources) and should also be reasonably easy to administer. In addition, because water is a basic need, water and sewerage tariffs are frequently used as a tool of social policy, and this complicates the matter considerably. With so many objectives to meet, there are inevitably conflicts, so regulators must make judgements about the tradeoffs among efficiency, social goals, and administrative simplicity. For example, regional or national uniform tariffs, which may be adopted for social or political reasons, do not reflect the difference in the cost of providing service to different areas and therefore are not necessarily consistent with efficiency objectives.

Direct subsidies vs. cross subsidies: Subsidy programmes which are financed from general budgetary resources and which target individual households directly are probably preferable to cross-subsidies, because they can be limited to qualifying households and do not negatively affect other consumers.

Cross subsidies (whereby higher income households and industrial and commercial consumers pay tariffs which are higher than the full cost of service so that low-income consumers may pay lower tariffs) appear to be more prevalent. Their disadvantages are that the higher tariffs which must be paid by some users may discourage water use for economically desirable activities and reduce overall demand for water, and therefore revenues. Cross subsidies should be designed so that social, economic and financial impacts are taken into account and a reasonable balance achieved – tariff policies consistent with the universal service objectives are key to this.

Maintenance and technical standards: There is a risk that a delegated operator which does not own the infrastructure, or otherwise bear the cost of its degradation, may try to maximise profits by neglecting maintenance and compromising technical standards when making repairs. On the other hand, an owner which leases its system to an operator may want to set maintenance standards unrealistically high in order to avoid the cost of replacements. Appropriate maintenance parameters. are needed to balance the interests of the two parties.

Promoting efficiency: The tariff should reflect the cost of service which is operated efficiently, broadly accessible to urban inhabitants and of a quantity and quality which are appropriate to the local context, taking into account factors such as the availability of water and the income and preferences of consumers. The tariff should be adequate to cover operating costs, depreciation and return to capital. It should motivate consumers to use water services efficiently and to use them for purposes which produce the highest net benefits. The fees of service providers (operators and owners) should be adequate to cover reasonable costs and low enough to motivate them to look for ways to reduce costs.

Ensuring fairness in compensation of multiple operators: The tariff is what consumers pay for service. It may also be the revenue of the service provider, but this is not always the case. Under some arrangements, the tariff may be divided among one or more entities (e.g., a treatment plant operator – say under a BOT scheme and a distribution operator) with each receiving a fee to cover the cost of its operations. In addition, if the operators do not own the assets, the owner would be paid a fee for the use of the assets. Regulation is concerned with both the tariff as a whole and with the fees each operator and owner receives. All should be fair and motivate efficiency. If tariff revenues must be divided among two or more parties, then adjustments in the tariff as a whole could reflect justified changes in any of the cost categories, and procedures for allocating tariff revenues should be equitable so that none of the parties is unfairly disadvantaged by an adjustment in another's remuneration.

Performance incentives: To promote efficiency, a service provider's remuneration could be based in whole or at least in part on performance. The service provider must have some control over the parameters to which its remuneration is linked, and this varies from one arrangement to another. Examples:

- For support services: unit rates for work completed.
- For full operational contracts: the operator's share of collected tariff revenues and collected connection charges, minus total operating costs.
- For BOT operator (e.g. treatment plant): guaranteed minimum volume times operator's fee per volume.

Setting the initial fee: Awarding an operational contract on the basis of competitive bidding for the fee to be charged for services is an effective way to set the initial fee, but it does not eliminate the need to

establish some regulatory or oversight capacity to monitor the operator's performance and negotiate fee changes during the life of the contract.

6.4 THE IMPLEMENTATION OF REGULATION

This section takes some of the generic regulatory issues already discussed and proposes a framework or model for further discussion and as a way of describing the sort of roles a national regulator might have. The framework is one that recognises the regulatory authority of municipalities in the provision of water and wastewater services. This is a discussion that needs to take place within the context of balancing national and local regulatory responsibilities, and which could be at the core of any application of competition policies in the water sector of each member state. It is understood that there can be difficulties in the implementation of competition rules when applied to public authorities and their activities. Consequently a regulatory solution could be implemented that would go a long way towards the achievement of competition policy objectives. The regulatory "solution" should also be seen in the context of public reporting proposals described in section 6.6 of this chapter.

When a national regulatory office ("regulator") for water and wastewater services is established, it generally has all the powers of a conventional "best-practice" sectoral economic regulator. Especially important are its activities in the area of information gathering, analysis and dissemination (e.g. metric benchmarking). These powers and functions are discussed above.

In general there are three modes of national regulation. The first mode ("**Mode A**") applies to water companies if neither of the other two modes apply. For this mode, the regulator sets performance standards[135], other regulatory requirements[136] and tariffs. Implementing regulations would elaborate on the methodology to be used for setting tariffs and there is ample precedent for drafting laws dealing with this mode. It should be noted, however, that the regulator will be allowed to take a different approach to tariff regulation for privately controlled and publicly controlled water companies.

The other two modes apply if the municipality has entered into a contract[137] with the water company that fixes performance standards and tariffs (or tariff formulas) in a non-discretionary way. **Mode B** applies if the water company is privately controlled[138]; **Mode C** applies if the water company is controlled by the municipality.

In both Modes B and C, if the contract meets certain criteria (see below) the contract regulator will allow the regulation of the water company to proceed under the terms of the contract (except in certain circumstances, to be discussed below). This means that ***performance standards and other requirements and the tariffs would be set and adjusted by the terms of the contract – not by the regulator***.

The main differences between Mode B and C are the following:

For Mode B (private company):

- The "contract" in question must be a legally binding contract.

[135] E.g.: pressure; maximum burst rate; response time for emergency repairs. (I.e. all aspects of performance not specified in any other way by law.)

[136] E.g.: minimal level of investments; reporting requirements.

[137] The term "contract" is used in a loose sense with respect to Mode C.

[138] Obviously, all of these terms will need to be defined more precisely in the legislation.

- The dispute resolution procedure in the contract must be consistent with broad rules set out in the law or developed by the regulator – with a view to assuring a speedy, unbiased, competent decision.

For Mode C (public company)[139]:

- In the nature of the agreement between the municipality and the operating company, the possibilities range from a memorandum of understanding or an agreement that is not legally binding – all the way to a contract binding under law. A high degree of specificity for all provisions may not be needed in this agreement between the company and the owner of the company. What should be precisely set out are (at least) the performance requirements and the tariff adjustment mechanism, all within a process that is transparent between the operator and municipality owner.

- In the same vein, some thought needs to be given to what the dispute resolution procedures for the agreement should be. It may not be appropriate that they are the same as those for Mode B. One possibility is that a panel of experts would decide disputes, with limited appeal to the regulator (e.g. decision of the panel accepted so long as there is "substantial evidence" to support it), or perhaps publicity to city residents would be sufficient.

- The idea of a service agreement between the municipality and its own water company requires one more element to be feasible. Certain key features of the *supervisory board* of the water company need to be specified in the law (or the regulations) to ensure that the company has sufficient independence from the municipality – especially concerning the method of appointment and dismissal of board members. The board must be able to see itself as acting on behalf of all stakeholders, not just the municipal administration or council. The idea of a service agreement is meaningless if the water company manager fears that if he disregards ad hoc orders of the municipality too often he will be removed from his job.

It needs to be thought through what kind of ex ante approval power a national regulator should have over the contract. It might not make sense to allow the municipality and the water company to enter into a contract with *any* kind of provisions they wished. On the other hand, instead of a prescriptive approach, it might be better to take an advisory approach.[140] The municipality would be obliged only to take the comments into consideration. In addition, the regulator might be given the authority to develop certain contract provisions and guidelines:

- *mandatory* contract clauses – e.g.:

  (i) indemnity and force majeure – is there really a need to negotiate these for each contract?

  (ii) standard direct agreements?

  (iii) a set of standard provisions to deal with what the company must do in cases of severe water shortage?

- *non-mandatory* guidelines for certain contract provisions – e.g.:

[139] There is a lot of debate going on at present about these issues. For this reason, it might be best for the law to contain broad provisions, with detail to be provided in implementing regulations issued by the regulator.

[140] This is an approach found more often with a government advisory services than with a typical economic regulator.

(iv) methods of adjusting tariffs in response to "specified events"

(v) ways of formulating performance standards and penalties;

(vi) tariff *structures*.

Whatever approach is taken to the issue of how to ensure sound contracts, the same approach should be taken to any contract amendments agreed by the parties.

Direct intervention by the regulator in Modes B and C is limited to ***Comprehensive Tariff Reviews*** (i.e. rebasing). The underlying idea is that, in the water sector, this is the critical regulatory activity that may not always be able to be handled adequately by "regulation-by-contract" and the normal dispute resolution mechanisms – because of the extremely high level of expertise and information required and the need for regulatory consistency across companies and over time.[141]

Tariff Reviews involve estimating *all* the future operating and capital costs that would be incurred by a reasonably efficient operator in order to meet the specified performance standards and other requirements[142] and then determining the average tariffs over time that would be needed to generate the required revenue. Past gains or losses (relative to past expectations) are not taken into consideration. The outcome of the tariff review is the resetting of the base tariffs.[143]

Although the basic idea is simple to convey, a set of more detailed rules has to be developed to make sure that the desired objectives are achieved without creating perverse incentives.[144] These would be set out in implementing regulations issued by the regulator. Also, special rules would have to be developed to deal with capital costs in the case of a private operator – involving a methodology for estimating the cost of capital and an approach for estimating the future rate of return.[145]

A special unit within the regulator's office would be responsible for preparing implementing regulations for the tariff review process. Thought should be given to whether even greater safeguards should be included to reinforce the independence and high level of expertise of any tariff review unit within the regulator's office. This is essential to the credibility of the whole regulatory system.

It would be mandatory for a tariff review to take place whenever requested by either party under conditions such as the following (regardless of what the contract says):[146]

[141] Note that there is no concept of stare decisis in arbitration awards.

[142] Which could be modified by agreement between the parties before or during the tariff review.

[143] But the regulator would accept the rules for determining the *profile* of tariffs that have been agreed by the parties – unless they cannot agree, in which case the regulator would determine the profile also.

[144] E.g. if it was assumed in the past that certain investments would be implemented and the past tariffs were set on that basis but the operator has deferred those investments, they should not be added again to the revenue requirement (or, in a long-term cash flow model, they should be subtracted from past planned capex).

[145] The approach might be different depending on whether the company is a *privatised* entity (use of regulatory asset base and depreciation) or a *concessionaire* (use of a long-term cash flow model and an IRR). Consideration should be given to amending the energy law to require the energy regulator to determine the cost of equity capital to use for private water companies, which would then be used as an input by the water regulator. This determination requires considerable expertise and is subject to great debate. (Many experts would admit that there is a large arbitrary element that cannot be eliminated at present, given our limited theoretical and empirical understanding.) It might be better for a country to have one consistent policy for all regulated industries than to have each regulator carry out the determination itself. (This has been proposed in the UK, for instance.)

[146] Some of the following could be left to implementing regulations, but the law should include some way to prevent the regulator from requiring a tariff review too easily and too often.

- if the contract calls for it (which it would of course)[147];
- if at least five (say) years have passed since the last tariff review;
- if unindexed tariffs have changed by more than *X%* in response to specified events since the last tariff review
- if nominal tariffs have changed by more than *Y%* in *Z* months in response to a specified event or to the operation of the indexation formula; or
- if requested by Government.[148]

If a tariff review is required, then the parties can choose between:

- carrying it out themselves (preferably in accordance with the regulator's guidelines, perhaps while receiving advice from a staff member from the national regulator) – and if they cannot reach agreement on the new base tariffs, then the review is carried out by the national regulator and the outcome is binding on the parties; or
- requesting the national regulator to carry out the tariff review

The interaction between the tariff review process and the specified dispute resolution procedures under the contract will need to be carefully worked out. Any dispute proceeding subsequent to a tariff review must take into consideration factors that were explicitly or implicitly taken into account in the review. (E.g. if the tariff review took into consideration a particular change in circumstances in its cost forecasts, then the parties cannot dispute that particular specified event afterwards through the normal dispute resolution procedures.)[149]

6.5 POSSIBLE APPLICATION OF REGULATORY SOLUTIONS

The preceding sections in this chapter indicate areas of regulatory practice, which are purported to be adopted, to some or most degrees, by regulators across Europe. It is difficult to get good information about price and customer service regulation, because on the whole this is implemented at municipality level. Information is not collated or reported at national level. With the exception of some utilities preparing annual accounts, water and wastewater service utilities are not generally required to publish information outside their statutory water quality monitoring requirements. Much of the technical and financial information that is needed for regulatory purposes is frequently considered to be confidential, between the municipality and the utility. The key to unlocking the ability of regulators to advocate and

[147] This raises a tricky question. What if the parties state that they have carried out a tariff review and they have agreed the new base tariffs, but it does not conform exactly to the methodology laid down by the regulator? For purposes of the first three points, it should be considered a tariff review so long as it conforms to the minimal definition of a tariff review as set out in the law itself and the parties have stated at the time (or the contract states) that they consider it to be a tariff review. The parties should be free to use any methodology they wish (consistent with their contract) because if either party wishes to use the regulator's methodology, he can impose that choice by threatening to dispute the outcome if the other party does not agree to use the regulator's methodology, a move that would throw the review into the national regulator's court.

[148] The idea here is to provide for a way to trigger a CTR in extraordinary circumstances that are hard to define ahead of time – e.g. suppose there are protests because people blame a water company for shortages due to a drought. The government must be seen to be doing something, and calling for an immediate CTR (coupled with a slower phasing in of more stringent performance standards) is better than just *ordering* tariffs to be lowered.

[149] This is an example of the complexities posed by the mixed approach proposed – complexities that might call into question the feasibility of the approach.

increase pressure for greater efficiency will be to ensure greater transparency of financial and service performance information of the utilities.

In a competitive market, good information for consumers is one of the most important elements in facilitating an efficient delivery of products and services. Good information in highly regulated sectors, and ones like water and wastewater which tend to be structured as monopolies, become the principle way in which those groups representing customers can keep a check on companies' abusing their dominant, monopolist, position. It is worth noting that the postal services directive (directive 97/67 of 15.12.1997 on common rules for the development of the internal market of Community postal services and the improvement of quality of service, OJ L15, 21.1.1998, p.14) foresees that there should be a regulatory body in place which is independent from the service provider:

> *"Each Member State shall designate one or more national regulatory authorities for the postal sector that are legally separate from and operationally independent of the postal operators." (art. 22)*
>
> *"Whereas, in order to ensure the proper functioning of the universal service and to ensure undistorted competition in the non-reserved sector, it is important to separate the functions of the regulator, on the one hand, and the operator, on the other; whereas no postal operator may be both judge and interested party; whereas it is for the Member State to define the statute of one or more national regulatory authorities, which may be chosen from public authorities or independent entities appointed for that purpose;" (recital 39)*

By recognising the importance of information to the regulatory process, it seems likely that any regulatory solution which is complementary to the application of EC competition rules will concentrate on increasing the transparency and dissemination of information on water industry performance. Currently price and performance comparisons are difficult because of the lack of information and/or comparable information. This supports the idea, suggested above that there should be a regulatory body (at central level) ensuring that this kind of comparisons are possible. And given the importance of local autonomy this body is likely to be non compulsory, acting as an advisory body rather than a regulatory body, ensuring that best practices are spread.

All other regulatory mechanisms are likely to rely on the need for a more transparent and consistent method for the collecting and reporting of performance and financial information of water and wastewater service providers. Information provision is an important tool adopted for regulatory purposes by member states and the EC for other areas of enacting EC rules. For example the EC currently collects a wide range of performance information from member states regarding the state of the environment and compliance with Directives on environmental protection and drinking water. Much of this information is originally sourced from the water and wastewater industry and is reported to regulatory authorities in member states.

It is already the case that information on the water and wastewater industry's performance in drinking water quality, water resources and quality management is available through the monitoring and reporting mechanism that currently takes place to enforce compliance with environment directives. This information is an important component of water industry performance.

From the perspective of competition rules, other information relating to financial and customer service is relevant. Some of these are mentioned above.

The rationale for developing a process for gathering and reporting some key performance indicators in these areas could be based on the application of the other directives; one on the "Transparency of

Financial Relations between Member States and Public Undertakings and Financial Transparency with certain Public Undertakings" and possibly the second on "Freedom of Access to Environmental Information" (Directive 90/313/EEC). The use of the latter Directive may in this respect appear rather tenuous as a link to the subject of competition. Nevertheless, as the breadth of environmental information appears to broaden to cover sustainability and economic issues under the Water Framework Directive, it does in any case seem likely that performance and compliance information reporting for the water and wastewater sector will need to adapt to the objectives of the Water Framework Directive and its provisions on cost recovery.

The approach may seem to be a modest one, but in a sector fraught with a lack of detailed performance information, it presents an opportunity for all stakeholders to consider issues of efficiency and customer interests on the basis of a common understanding of the sector's performance and cost.

6.6 IMPROVING CUSTOMER PRESSURES THROUGH PUBLIC PERFORMANCE REPORTING

In a competitive market, system performance by individuals and organisations is evaluated by the end user and the supplier is rewarded or penalised. When the ideal market is replaced by bureaucracies and monopolistic market structures, the link between performance and reward becomes more complex. Typically the alignment between what the end user wants, and what the supplier provides is lost. This is because the supplier will take on divergent views on what constitutes performance, and this may have nothing to do with meeting the needs of the end user of the service. A public enterprise manager working within a government ministry, for example, would consider maximising his budget appropriation as the benchmark of good performance. In other words, incentives facing the employees generate performance standards that are often at variance with the overall organisational or welfare goals of society. These "agency" problems dictate the actual performance attributes in organisations.

One alternative approach, however, is to complement the regulatory discussion on incentives and penalties to concentrate on mobilising "end users", or civil society, to demand improved performance from the supplier. Such demand would act as the catalyst for adoption of reforms appropriate to the situation. The "agency" would have to work out what it needed to do to meet those demands. The question becomes – how can the "end user" be mobilised in this way? One possible solution is through public reporting of performance.

The key features of such an approach are:

- The selection of appropriate indicators of performance. These should be measures which are both measurable, and are meaningful to the end user. Review of the indicators will give the lay person and adequate understanding of the performance of the provider.

- The presentation of results in a way that the end user can understand. This will allow an informed assessment of how good or bad the service is, and hence the extent to which improvements should be expected.

- Having an end user, or representatives of end users such as an independent regulator, that are able to articulate the need for improvement in such a way that suppliers feel a need to improve.

Publication of meaningful indicators, in a way that is readily understood by the end user, will have two important results:

1. It will increase transparency by reporting the actual level of performance being achieved by the supplier. While civil society might grumble about poor performance, it is often hard to find data that will support their case. The public reporting system will provide them with that data.

2. It will increase accountability. Publicly identified poor performance will be, or will quickly become, someone's responsibility.

With increased transparency and accountability, and with adequate pressure from civil society, improvements in efficiency and services might reasonably be expected.

Public reporting of performance can be applied equally to public or private suppliers. In the Netherlands, VEWIN collects and publishes performance information supported by customer surveys for the public water distribution companies on an annual basis. In England and Wales, Ofwat reports on the performance of all providers in the entirely private water sector. There is nothing to stop performance reporting on a mix of both public and private entities.

The Ofwat Experience in England and Wales

Regulators and industry associations maintain and regularly update key performance indicators of their constituents. Ofwat in the UK, for example, publishes performance data from water companies utilising a relative comparison approach in many indicators (below average, average etc). From these data a reader can easily figure out the utility which is doing well, and another not doing so well. These results have spurred the whole group of utilities to perform better. A 'below average' today is actually better than an 'above average' 10 years ago.

Pressure comes on in a wider arena than that. For example, a public water utility is usually overseen by a Board, or by locally elected politicians. Poor performance of a water utility is therefore also a reflection of poor performance of the Board and the local politicians.

It is not only the providers that will come under the spotlight. There will be some exposure of the body that compiled, and provided analytical commentary on, the public performance report. They will have to ensure they have compiled and analysed the data correctly, and their commentary is fair and objective.

Public performance reporting could be a valuable tool in the battle to improve service performance. As it is not a widespread activity, the question must be asked as to why it does not receive greater attention. Most of the reasons relate to the legacy arising from decades of public sector provisioning.

Data availability in the appropriate reporting format not available. Reports of utility performance typically are not closely monitored by national policy makers and donor agencies in a format that helps identify the best in the class or the underachievers. Instead, data collected are either on broad policy-oriented themes such as coverage (focusing on service deficits), or specific information useful for public investment purposes (eg project-related information, disbursements and financing requirements etc).

In the latter instances, the underlying premise is that service providers need a lot of resources to meet service deficits, and that if resources are provided they would have the right set of incentives to service consumers according to what the latter want and are willing to pay for. When agency problems exist, this premise is obviously questionable, and the fallout is that data availability gets tailored to the specific agency interests rather than for enhancing consumer welfare. Not only are data not available, but more often sectoral agencies are unwilling to report/receive information on the extent of any under-achievement.

So who benefits from a public performance reporting system? The customer, if the reporting results are utilised by civil society, policy makers and funding institutions. No-one, if the "worst in the class" are able to use specious arguments such as distributional equity to secure more resources.

- Public reporting of performance is a high impact activity, the effectiveness of which has been demonstrated in a number of examples presented in this article. While its benefit/cost ratio has not been quantified anywhere, it would be reasonable to assume it is very much greater than 1.

- Public reporting introduces a transparency to the relationship between the supplier and the end user which cuts out the various players that would otherwise interfere with, or cloud, the discussion on service provision.

- Public reporting allows the end user to better understand whether they are receiving a reasonable service, whether that service is improving or deteriorating over time, and hence to what extent they might feel justified to push for change.

- Public reporting, by exposing poor performance, will increase accountability within the supply agency and hence their motivation for improvement – to the benefit of the end user.

Governments could do more to encourage public performance reporting as a tool to promote improved efficiency and service delivery.

7. CONCLUDING REMARKS

7.1 GENERAL ISSUES

These concluding remarks include a summary of some of the important issues mentioned in earlier chapters. Some of the remarks regard the future direction for applying competition policies and possible regulatory solutions.

In principle it must be correct to seek on a continuous basis improved efficiencies and better levels of service in an industry that represents such a significant economic aspect of the lives of citizens and the governments. It is oft mentioned that water and wastewater services are among the most fundamental and critical public services provided to all citizens and industrial entities. As such they should meet citizens (customers) expectations for quality and value. It must therefore be appropriate to look to EU policies and rules on competition to support the process increasing the water and wastewater industry's efficiency and quality of service.

The influence of competition policies on monopolistic economic sectors such as telecommunications and energy has created efficiency improvements and benefits for customers in terms of lower prices and a greater diversity in services and choices for consumers. These industries have in general, also benefited from greater increases in innovation, research and investment, and in many cases establishing themselves as leading international business. These developments have the potential impact of benefiting member state customers with higher quality services and lower prices resulting from better efficiencies.

The European Commission has had a major impact on the development of policy and legislation in the member states which directly effects the activities of water and wastewater utilities, particularly in terms of water pollution control and the provision of safe drinking water

The legal regimes, which have been developed across Member States concentrate on measures to protect human health, to protect the environment and to provide a framework for the devolving of management responsibilities to municipality or local authority level. Most recent legislation has had the priority to adapt European Commission Directives on the Environmental Protection and Drinking Water Quality into national legislation. All countries have and or will be implementing legislation to transpose the requirements of the Water Framework Directive and to effect is enforcement

Water supply and wastewater services to the public are the legal responsibility of municipalities in all EU member countries, except in the UK. Municipalities have the legal ownership of assets for the provision of water supply and wastewater services in all EU member countries, again except in the UK. Differences in the structure of the water industry between these countries reflect the manner in which municipalities discharge these responsibilities, be that as local municipality departments, municipally owned (or partially) owned companies, inter-municipality associations or companies, or through the signing of concession contracts with private or public sector companies to undertake operations.

The water industry does not fit easily into standard economic theory with regard to market competition. There are significant externalities (social costs and benefits) and many parts of the industry are widely viewed as natural monopolies.

Competition is not the end in itself; competition can be a way of ensuring continuous improvements in efficiency that will ensure the water utilities do not abuse a monopoly position, both as private and as a public-owned entity. Hence decisions on competition need to be made on the basis of what the long-term effects on efficiency will be in the industry

The presentation of options is normally done on the basis of identifying "competition **in** the market" (common carriage and retail service) and "competition **for** the market" (franchising and outsourcing of services).

Competition *in* the water market is generally regarded as a water services competition environment that is characterised by common carriage or retail activities. This is defined as "making available to customers a choice of water supplies through the transfer of water between the distribution networks of appointed business" (WRc, 1996) and that the granting of third or fourth party access is fundamental to the establishment of a competitive water network market.

Competition *for* the market in which utility companies compete for contracts to provide services to the market is considered by most commentators to be the most relevant to implementing competitive influence in the water and sanitation sector. The rationale for this is frequently based upon the belief that the most significant efficiencies are to be achieved in managing and utilising capital programmes, and in achieving efficiencies in the operations.

This is borne out by evidence of many contracts based on BOT (Build, Operate and Transfer) and DBO (Design, Build, Operate) and other derivatives, in for example Ireland, Belgium, UK, Greece, Italy, Portugal. The contracts are for the *operation* of the assets, whilst the government or municipal body retains ownership. In addition, there is significant evidence that efficiencies can be made through the competitive outsourcing of construction and some operation activities.

The key test to the successful implementation of competition pressures in these areas is the degree of "contestability" that exists for each contract and the processes that ensure transparency and opportunity and that deal with concerns related to incumbent advantage and possible collusion.

Chapter 4 identified possible models for applying competition in the water sector. Within the current structure of the industry in Europe, mainly a municipal responsibility with a large variety of service providing entities developed in most states, it is likely that many of these models would be unachievable without significant reform of the sector. This reform would have impacts not only for the water and wastewater service providers themselves, but also for the political and governance structures of many of the member states municipalities.

7.2 ON THE APPLICATION OF EU COMPETITION POLICY

There is considerable scope of application for the EC competition rules to increase competition in the water sector.

Competition for the Market

First, the exercise and the material scope of exclusive rights granted to undertakings, could by itself be subject to EC competition law. The mere fact that a Member State has created a dominant position by granting exclusive rights is not as such incompatible with the provisions of Art. 82 in conjunction with Art. 86 ECT. However, creating a dominant position by granting exclusive rights is incompatible with the competition rules, if the undertaking in question, merely by exercising its exclusive rights is led to abuse its dominant position or when such rights are liable to create a situation in which that undertaking is led to commit such abuses.

Internal Market legislation does not impose as such an obligation on public authorities to tender out the provision of water services to third parties. The authorities may decide to ensure the provision of water services entirely through their own services. Nonetheless, public authorities are subject to the detailed EC procurement rules when awarding public services contracts. In the case of the award of concessions, the Internal Market Rules, e.g. principle on transparency and non-discrimination, need to be complied with whenever public authorities decide to entrust the provision of water services to a third party. However, the classification of so called the inter-organic delegation between the concessionaire (i.e. the exclusive right holder) and the grantor which do not fall outside the administrative sphere of the delegating authority. In practice, a grey area might exist when the delegating authority bears also the financial risk involved in the management of the construction and thus the contract might no longer be regarded as a concession.

Second, EC competition law is applicable when undertakings are competing for concessions in the water market. To this end, e.g. bid-rigging agreements between undertakings competing for water concessions could infringe Art. 81 ECT. In addition, abusive practices, e.g. predatory pricing, by undertakings holding a dominant position in the concession market could be incompatible with Art. 82 ECT.

Competition in the Market

The most relevant restrictions in these market segments, which are characterised by some degree of opening of competition, include horizontal or vertical agreements between undertakings and/or abusive conduct of undertakings holding a dominant position.

Horizontal agreements, e.g. demarcation agreements, and vertical agreements, e.g. exclusive supply/purchasing agreements, could lead to market foreclosure and thereby violate Art. 81 ECT. Similarly, “resale price maintenance” by price-fixing agreements between bulk water suppliers and undertakings providing the retailing services could be subject to Art. 81(1)(a) ECT.

As regards abusive conduct of dominant undertakings, exclusionary conduct, related in particular to access to the network issues and exploitative conduct related in particular to the relations with the final customers could infringe Art. 82 ECT and restrict competition in this market.

Also, there seems scope of application for the competition rules on agreements between bulk water supplier in which the price for sale of the water is too high, thus amounting to excessive pricing for the retail supplier.

Neighbouring Markets

Competition is also taking place in neighbouring markets to the water supply market, e.g. in the segment of upstream supply of goods and services which refers to the market of services of financing, engineering and construction of water networks. This market relies on the transparent application of procurement rules to ensure non-discriminatory award of services. In this market segment the EC procurement rules, in particular, the Directives 93/37/EEC, 93/38/EEC, 92/50EEC are applicable. Also, there may be scope for application of Art. 81(1) and 82 ECT.

Merger Issues

With respect to Merger issues there is scope for application of the EC competition rules, if an undertaking entrusted with public interest services acquires control over undertakings in competitive markets using the profits obtained from its legal monopoly. To this end any evidence which shows that the funds used for the acquisition in question is derived from abusive practices in the reserved market gives rise to an obligation on the Commission to examine the source of those funds and could constitute an infringement of Article 82 ECT.

State Aid Issues

EC competition rules could be applicable with regard to private undertakings in the public utilities sector, which had been transformed from a public to a private enterprise, and that benefited from State aids, e.g. laws either allowing them to take loans or providing for income tax exemptions. In this context, State aid might bear distortional effects on the market and are therefore -according to Art. 87 (1), 86 (1) ECT- incompatible with the common market, if it is indeed found to distort competition or threaten to do so.

Recent case law defined the public funding of a service of general economic interest as a compensation for the service provided in the general interest and not as a State aid, on the condition that the funding is not exceeding the net cost of the service provision. Consequently, member states are not obliged to notify the aid to the Commission. However, if the funding is excessive, this is an aid that cannot be considered compatible on the basis of Article 86(2) EC Treaty. As national authorities will assess the proportionality of the (State) aid and thus possibly apply different criteria, distortions of competition may be provoked. Also it will be difficult for the Commission to discover possible infringements. Thus, in view of the ever more competitive character of these sectors there is a clear need for transparency

7.3 REGULATORY SOLUTIONS

The challenges for regulatory authorities to become such “advocators” of efficiency and improved customer service in water and wastewater sector are significant. This is because in many member states (maybe most) the language of competition appears to conflict with notions of public service and differing interpretations of the application of EC competition rules in sectors that are services for the general economic interest. Also the language of “competition” has been inherently confused and entwined with the language of “privatisation” and “liberalisation”. The issues and the language of competition is distinct and is about processes and structures, and regulation that supports efficiency, high quality of services and competitive prices.

All industries are regulated to different degrees, depending on conditions of market competition and community interest. The water and wastewater industry needs to be highly regulated given the impact that its operations can have on public health and the environment. In addition, being in the main undertakers of a natural monopoly, there is a need to protect the customer's interests.

Regulatory solutions are no substitute a clarification of the water and wastewater industry as a service of general economic interest and therein if the sector must conform with the EU Treaty provisions for competition rules. This will then provide a basis for clarifying the position on the application of the Directive on Concessions in the water and wastewater sector. In the Chapter 5 this position is discussed.

It might be that the proper and full application of existing EC rules would have an important role to play in providing further competitive influence on the water and wastewater sector in Europe. For this to happen the current regulatory authorities, particularly those that represent customer interests and those that provide price regulation, would need to become greater advocates for competition. This would require a legislative framework that defines their roles and responsibilities to more clearly empower them to implement decisions based upon EC competition rules.

In a competitive market, good information for consumers is one of the most important elements in facilitating an efficient delivery of products and services. Good information in highly regulated sectors, like water and wastewater which tend to be structured as monopolies, become the principle way in which those groups representing customers can keep a check on companies’ abusing their dominant,

monopolist, position. The recommendation for a greater degree of public reporting of financial and service performance would do much in the short term to increase competitive pressures on the industry. By recognising the importance of information to the regulatory process, it seems likely that any regulatory solution, which is complementary to the application of EC competition rules will concentrate on increasing the transparency and dissemination of information on water industry performance.