

WORKING PAPER

Water Services in Austria



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1. Introduction

As part of the project for national reports on local services of general economic interest, this paper seeks to shed light on the provision of water services - i.e., water distribution and wastewater disposal - in Austria. More specifically, the underlying work addresses the central issues related to water provision: the (domestic) legal framework, the actual mode of provision and financing as well as monitoring and regulation. Whenever available, the representations of provisional aspects have been supplemented with data.¹ The main task of the subsequent sections is to sketch the evolution of the Austrian water sector over the last 10 to 15 years and identify the main drivers of these developments.

2. Legal framework

2.1 European background and context

2.2 Domestic legal framework

According to Austrian law the main water-juridical competence lies with the federal provinces, both in legislation and execution. In this respect, water supply and sewage disposal together with the right to enact laws related to organisation and implementation of water distribution and wastewater disposal falls within the juridical sphere of the federal states. Execution of the service itself lies on the municipal level and is codified by the respective federal province law. According to Art. 116, para 2 B-VG (Bundesverfassungsgesetz, the primary constitutional act) municipalities thus have the possibility to operate a commercial enterprise. Regarding task implementation there is no principle of subsidiarity favouring a private over a public solution. However, all provincial laws, except in Carinthia, have restricted public activity to tasks which are in public interest.

According to Art. 10, para 1, lit 10 B-VG the water-juridical competences of the federal State are limited to "water rights; control and conservation of waters for the safe diversion of floods or for shipping and raft transport;

¹ It should be noted however that data collection and publication by the responsible entities is very limited and has led to a somewhat eclectic use of different data sources.

regulation of torrents; construction and maintenance of waterways". On that basis the Federal Water Act (Österreichisches Wasserrechtsgesetz) was enacted in 1959, which includes general provisions dealing with legal classification, usage, pollution control, protection of water as well as general water management obligations. As a consequence of the increasing pollution of Austrian rivers, lakes and waterways there was a comprehensive amendment in 1990, which sought to implement the development of a comprehensive concept for water management in Austria.² In 2003 there was another major amendment, which mainly concerned the incorporation of the European Union Water Framework Directive into national law. The main focus was the introduction of regulations to prohibit deterioration in the existing water quality and to improve water management planning.³

In what follows, the most important points in the Austrian legislation regarding water shall be summarised, with a focus on federal legislation. Federal province and municipal legislation, which vary to a degree, will be analysed in the case studies by way of examples.

2.2.1 Water Act (Wasserrechtsgesetz) (WRG)

The WRG, the central legal basis for the Austrian water management, regulates by means of obligations and prohibitions the usage of water bodies and affects the following areas - either directly or by ordinances, which are enacted by the minister on basis of the WRG:

- jurisdiction and stages of appeal
- supervision and inspection
- usage of drinking and process water
- connection and compulsory use
- sewage disposal
- water management planning

According to the WRG the competence of the Federation lies with the Minister of Agriculture, Forestry, Environment and Water Management (BMLFUW), except for drinking water quality, which lies with the Minister of Health, Family matters and Youth welfare (BMGFJ). On the one hand, the BMLFUW directs the Umweltbundesamt (federal office for environmental matters), whose responsibilities include the compilation of

² Schönböck et al. (2003), p. 14.

³ RL 2000/60/EG; WRRL.

specific scientific knowledge, data and readings. On the other hand, the BMLFUW also directs the Bundesamt für Wasserwirtschaft (federal office for water management), which covers the areas dealing with hydraulic engineering, groundwater balance and ecology of water bodies. The abovementioned BMGFJ is responsible for regulation and supervision of drinking water quality. Subordinated to the ministry are the Lebensmitteluntersuchungsanstalten (departments for examination of foodstuffs), which carry out the operative (technical) supervision of water quality.

At provincial level the water management tasks are exercised by the respective provincial government office (Amt der Landesregierung), e.g., specialist department or department for water rights. First instance is basically the district administrative authority (Bezirksverwaltungsbehörde). §§ 99 and 100 provide for some exceptions where the governor (Landeshauptmann) or the minister are the authority of first instance. The supervision authorities according to § 130 WRG are responsible for ensuring:

- that control, water laws and provisions are followed (Gewässerpolizei)
- examination of water body quality (Gewässerzustandsaufsicht)
- pollution control (Gewässergüteaufsicht)
- groundwater protection

The distinction between private and public water bodies made by §§ 2 and 3 WRG provides for a differentiation in regard to limiting usage. Basically the ownership of a land owner includes water bodies on their land. According to § 8 WRG the legislator allows for common water use - under the public trust doctrine (Gemeingebrauch) - on both public and private water bodies. Utilisation which exceeds this common use, as well as all installations, requires a permit. A similar regulation applies to private surface waters.⁴

During proceedings, the competent authority has to balance the various interests, there is no right to a permit. An application may be denied for reasons of public interests according to § 105 WRG, or the permit may include conditions. A decision about an application has to consider the principles of sustainability and need, according to § 13 WRG. Thus hoarding of water rights must be prevented on the one side and, on the

⁴ See § 9 section 2, WRG.

other, the preservation of ecologically functioning bodies of water and water supply shall be ensured.⁵

The "Standards for the quality of water for human usage" are codified in the drinking water ordinance (Trinkwasserverordnung, TWV) and in the surface drinking water ordinance (Oberflächen-Trinkwasserverordnung). The TWV replaced several other ordinances in 2001 due to legal requirements of the European Community. § 36 WRG enables the provinces, with regard to the organisation of water supply, to enact an obligation to connect to the existing public water supply system to "safeguard the interests of a public water supply company servicing the public good". They may further limit the construction of self-supplied installations, if "the construction of new installations could endanger the public water supply conduits concerning economic continuity". On the other hand, the (often monopolistic) provider of sewage disposal services there is obliged to contract with consumers.⁶

Additional regulations in the WRG concern the disposal of sewage, whereby actions, which affect the composition of a body of water, either directly or indirectly, may only be executed after obtaining a water rights permit under § 32, section 1 WRG. Due to § 32, section 3 WRG the construction or modification of an installation for cleaning public water bodies or waste water treatment requires a permit, regardless of whether or not they affect the composition. The emissions ordinances (General waste water emissions ordinances, AAEV, Allgemeine Abwasseremissionsverordnung) includes general threshold values for the emission of waste water into waterways, public sewage systems and waste water treatment.⁷ Industry-specific threshold values are given in the respective sections of § 4 AAEV. The special circumstances of single-unit installations in extraordinary locations are considered in the third wastewater emissions ordinance for communal waste waters. In the case of indirect sewage disposals into authorised sewage systems - subject to the consent of the respective owner -, the permission requirement is reduced to a notification and duty to report. Nevertheless, under § 1, indirect sewage disposal ordinance, certain types of sewage involve permission and report obligations because of their hazardous nature, their amplitude or because of EC regulations.⁸

Because of the implementation of the Framework Directive, the monitoring of water body quality was also incorporated into the WRG (§59ff). Thus the

⁵ See Schönböck et al. (2003), p. 16.

⁶ See Schönböck et al. (2003), p. 17.

⁷ AAEV, BGBl. No 186/1996.

⁸ See Schönböck et al. (2003), p. 17.

hydrography act (Hydrographiegesetz) of 1979, which included nationwide data collection on water quality and the enacting of corresponding remedial action, was replaced. The integral basis for the implementation of the water Framework Directive is found since 2003 in the new 6th chapter of the WRG. Being a kind of "tool box" for water management planning, this chapter includes provisions on principles of planning, centralised analysis of the actual status quo, and action programmes and their implementation.⁹

2.2.2 Government aid

Government aid for sanitary environmental engineering is granted foremost under the Environmental Assistance Act (Umweltförderungsgesetz), which aims for the following objectives:¹⁰

- protecting surface and ground water against pollution, providing the population with hygienic drinking water and supplying process and fire water
- securing economical water consumption
- reducing environmental charges on water bodies, air and ground as well as the preservation of the natural water balance
- consideration of the future development of demand for water services (above present demand).

Therefore § 17, section 1 UFG focuses on improvement of existing structures and raising efficiency and redevelopment of old installations as possible beneficiaries of government aid. Further, § 17 section 2 and § 21 UFG considers measures for sewage disposal in businesses, other company internal waste water-related measures and research projects dealing with sanitary environmental engineering worthy of aid. Based on the UFG, Aid Guidelines (Förderungsrichtlinien) were enacted, which codify the following principles for granting aid:¹¹

- sewage disposal: 8% - 50% of investment costs are refunded plus a possible lump-sum of at most 20 \$ of investment volume - it was formerly 20% - 60% overall;
- water supply: 15% of investment costs are refunded plus a possible (not previously specified) lump-sum - it was formerly 20% overall.

⁹ See Kletzan et al. (2004), p. 12.

¹⁰ UFG, BGBl. No. 185/1993, idF BGBl. I No. 74/2008.

¹¹ UFG, BGBl. No. 185/1993, idF BGBl. I No. 34/2008.

The decline of the aid is a result of the decreased volume appointed for UFG-related activities by the financial equalisation (Finanzausgleich) between federation, provinces and municipalities. Further lump-sum payments for the construction of sewage disposal facilities were included to offer an additional incentive for cost-efficient project planning.¹² The financial funds to cover this aid are effected by the environment and water management fund, which is provided for in § 51 UFG. Business management and processing are handled according to § 46 UFG by Kommunalkredit Austria AG, a special bank which finances investments into infrastructure by public institutions. Due to financial equalisation 218 million euro have been available during the years 2005 to 2008; 1.06 billion euro are budgeted for the period 2008 to 2013.

2.2.3 Framework for organisational forms

The decisive point here is the distinction between organisational forms based on public law and organisational forms based on private law. The first category includes various forms of municipal undertakings such as Regiebetriebe¹³, Magistrats- oder Eigenbetriebe¹⁴, and water cooperatives and water associations. While water cooperatives can be founded to pursue major water management tasks related to the provision of drinking, water associations deal with tasks which encompass more than just one municipality.¹⁵ According to §§ 76 and 88 WRG foundation of water cooperatives and water associations may involve coercion. In the case of sewage services, operators of waste water systems can group as a so-called "sewer and waste water treatment neighbourhoods". Participation is voluntary and the carrier is the Österreichischer Wasser- und Abfallwirtschaftsverband (ÖWAV) (Austrian water and sewage management association). Organisational forms based on private law (e.g. AG or GesmbH, which are similar to PLC and LLC) vary according to the respective organisational and ownership structure. Possible types comprise corporatised public companies, private sector participations (PSP) or public-private partnerships (PPP). A pivotal motivation for corporatisation of municipal tasks in recent years was the fact that a Maastricht-compliant corporatisation led to a decrease in municipal debt, which was necessary to meet the Maastricht criteria. Moreover, this step reduces the need for future investment - water and sewage services for

¹² See Kletzan et al. (2004), p. 15.

¹³ no own legal personality, a part of the regular administrative organisation.

¹⁴ no own legal personality, but own funds and organisation.

¹⁵ See ÖWAV (2001), p. 25.

citizens accounting for about 35% of overall municipal investment - and with it the necessary loans.¹⁶

Although many organisations under private law and hybrid forms are possible,¹⁷ hardly any of these structures are found in the Austrian water sector. The predominant majority of enterprises with a private law organisation are held exclusively by territorial corporate bodies (Gebietskörperschaften) and it seems highly unlikely that there will be a paradigm shift in the organisational choice regarding water provision services.

2.2.4 Tax law aspects

When choosing an organisational form, tax law aspects also play a role. Principally tax law is designed in such a way, that commercial enterprises run by a municipality should have no advantage over private-law businesses. On the contrary, certain activities carried out within the sphere of public law enjoy certain tax advantages.¹⁸ Regarding turnover tax, there are neither advantages nor disadvantages if water supply or sewage disposal are carried out by, or together with, private companies. According to § 10 Umsatzsteuergesetz (UStG, Turnover Tax Act) all organisational forms (including municipalities within public law) are liable for turnover taxation with the reduced tax rate of 10% and have the possibility of pre-tax allowances. With respect to income tax, there is a disadvantage if tasks such as the provision of drinking water or sewage services for households are carried out in a private law organisation or by corporatised public companies. The reason is that sovereign functions such as drinking water provision are exempted from income taxation if it is provided by a municipality.

Summing up, there is a disadvantage if companies under private law - the great majority of which are corporatised public companies - provide services which are usually located in the sphere of public law. Additionally, due to special regulations, municipalities and water associations are freed from certain fees and transaction taxes, which have to be borne by private companies. This is certainly a drawback for PSP projects.

¹⁶ See Puwein et al. (2002).

¹⁷ E.g. service contracts, management contracts, leaseholds, concessions, collaboration models, operator models.

¹⁸ See BMLFUW (2001), p. 24ff.

2.2.5 Public procurement regulations

Because of the EU guidelines for tendering, the Bundesvergabegesetz (BVerG, Federal Awarding of Contracts Act) and several Landesvergabegesetze (law of the provinces relating to tendering and awarding of contracts) were enacted. The various sectors are separately treated in individual chapters, as is the case for the awarding of contracts in the water sector. Only tenders exceeding a set threshold value (measured by the estimated contract value) fall within the scope of the BVerG. According to § 180, section 1 BVerG the critical threshold values for contracts in the water sector are as follows:

- Supply or service contract: € 412 000
- Building contract: € 5 150 000
- Concessions: a process involving several companies and an adequate degree of publicity is required if the value of a single tender exceeds € 60 000.

If the above threshold values are exceeded, a contract must be tendered. Apart from that, EC law guidelines regarding principles and fundamental freedoms of the EC treaty must be respected (e.g., prohibition of discrimination, equal treatment, free movement of goods and services). There are also detailed regulations for the water sector, in particular in § 168 BVerG.

3. Provision and regulation of water services

A brief summary of Austria and relevant information concerning the following analysis is given in table 1.

Table 1: Factsheet Austria

Population:	8,0 mio.
Density:	99/km ²
Geography:	largely mountainous due to its location in the Alps. Flattening towards the more densely populated east.
Number of Provinces:	9 (See map below)
Number of Municipalities:	2 375
State structure:	decentralised, federal system

Figure 1: Map of Austria
Source: Statistik Austria (2009a)



3.1 Prevailing organisational forms

In the area of water distribution and provision the most important organisational types are municipal providers, water associations and cooperatives. Municipal providers are the dominant organisational form in Austria,¹⁹ one very common form is the public utility company - usually found in major cities (e.g., Vienna, Graz, Linz). Most of these municipal providers - Vienna as an exception - are organisations under private law with the respective city as sole/majority owner. Private participation is still very rare in Austria (exceptions are EVN or Salzburg AG). In certain federal provinces, such as Vorarlberg, Tirol, Burgenland, Salzburg and Upper Austria, water associations - usually a pool of member municipalities - play an important role in the water sector.²⁰ Especially important for sparsely populated areas, cooperatives play an important role and represent the backbone of the system. Although their sheer number is considerable²¹, their share of population served is far less significant.

¹⁹ Accounting for around 60%. See Table 3.

²⁰ See Schönback et al. (2003), p. 65f.

²¹ Approx. 5 800; For more information see Tables 2 and 3.

The sewage business is usually organised in a two tier system, namely the canal system and the sewage plants. As in water provision municipalities, associations and cooperatives are the main organisational types. While municipalities and associations are virtually the only operators and proprietors of canal systems, there is a wide variety of organisational forms involved in sewage plants. However, also in the case of sewage plants, municipalities and associations are the most common owners. Concerning the provision of sewage services by municipalities, deregulations in recent years led to a situation, where only a small part of waste- water disposal is still directly - in terms of a public company under public law - operated by the municipalities.²² Today, most municipal providers are operating under private law with the respective city/town being the (majority) owner - a similar pattern applies to water distribution.

Considering the range of services provided, Table 2 shows that most municipalities offer the whole package of services related to water distribution (carriage, transport, delivery to the final consumer and settlement) and wastewater disposal (wastewater collection, transport, cleansing, settlement) for the whole municipal area - 60% and 73%. About 27% and 4% of the municipalities provide a comprehensive service for a part of their community area in water distribution and sewage respectively. Some 13% in the distribution and 23% in the sewage sector cooperate more intensly, usually through associations.

Table 2: Service provision

	Provision/Distribution	Sewage
Comprehensive service	60%	73%
Partially comprehensive service	27%	4%
Pure cooperation	13%	23%

Source: Own calculations based on a survey of Puwein et al. (2002) comprising about 600 municipalities

An additional feature of the Austrian water sector is the small average scale of operational units. This structure is mainly a result of the federal system in Austria, which emphasises local and regional self-determination. The abovementioned cooperatives are an indicator of this situation.

²² See Schönböck et al. (2003), p. 67.

3.2 Production efficiency under different ownership and organisational forms

As a result of the already mentioned small scale operations in the Austrian water sector there is little information and data on business conduct and efficiency. Even though there was a controversial debate about efficiency and private versus public ownership in the wake of an infamous PriceWaterhouseCooper report on the water sector, the argumentation was mainly ideological, and hardly any data was presented to support the arguments.

Until now there is only the study of Puwein et al. (2002) which empirically assesses the efficiency in the Austrian water sector through a questionnaire. Due to the low dynamic of the sector the results from 2002 may still be regarded as valid. However, the authors emphasise that the data collected does not warrant a systematic comparison between private and public companies. The main results of the study, which uses Data Envelopment Analysis (DEA) to measure efficiency and regresses those results on various explanatory variables,²³ are as follows:

1. The legal form of a unit has no significant impact on efficiency
2. Similarly, there is no significant difference between self or external procurement (make or buy)
3. Economies of scale would amount to 5% to 10% efficiency gains
4. In contrast to production efficiency there is a considerable input cost savings potential of 15% to 25% (e.g., through coordinated bargaining with suppliers)

What remains is to mention significant efforts which have been undertaken by water/waste-water providers to improve efficiency - perhaps as a result of liberalisation threats and pressures. Benchmarking and "Best Practice" comparisons were designed and implemented to assess efficiency potential and implement a quasicompetition among the mainly monopolistic providers.²⁴

²³ It should be noted, however, that such simple two-step inference is questionable due to the unknown form of serial correlation among efficiency estimates, as argued by Simar and Wilson (2007).

²⁴ OVGW (2004).

3.3 Structure of supply

One important and typical feature of (local) public services is compulsory connection and usage. This means that, by law, households cannot choose a provider but are connected to the local net and are obliged to use only the respective service. Water supply is thus characterised by (local) municipal monopolies. How the local authority organises and operates the service is, however, up to the respective municipality. In the following the different organisational forms are being analysed.

Table 3: Organisational forms

Type	Provision/Distribution	Sewage
Municipalities	76%	74%
Associations	8%	19%
Cooperatives	12%	5%
Others/Private	4%	2%

Notes: "Municipalities" also include corporations under private law, which are owned exclusively by a municipality.

Source: Förderdatenbank Kommunalkredit Austria

Table 4: Structure of the Austrian water sector

	Provision/Distribution	Sewage
Municipalities	1 900	491
Associations	165	109
Cooperatives	5 800	32
Others/Private	not available	6
Sum	7 865	638

Notes: "Municipalities" also include corporations under private law, which are owned exclusively by a municipality. The values for sewage are for sewage plants of > 2000 population equivalent (p.e.).

Sources: Schönback et al. (2003) and BMLFUW (2003a)

Table 3 shows the shares of the different organisational forms, as given by the number of organisations which applied for federal funding support between 1993 and 2002.²⁵ Table 4 presents the number of companies which were active in the respective sector around 2000. The difference in cooperatives between the two data sources suggest that, although the number of cooperatives is huge, they applied only rarely for federal funding, a result that is certainly linked to the very small operational size

²⁵ See BMLFUW (2003b), p. 9.

of these units. As the tables show, the average production unit is relatively small in water distribution and sewage, and most municipalities provide waste services on their own. This business structure is mainly a result of the regulations and water laws, which allocate water-juridical competences at federal province level and the task of service execution at local level. In the case of water distribution the number of self-supporting cooperatives is still relatively high, while there is a higher number of larger units (mostly associations) in the sewage sector. With respect to the public procurement directive, these small-scale operations add to the fact that hardly any tenders were initialised because the size of investment for small (waste)-water facilities was/is usually below the threshold values. Another side-effect of the small scale operations are the extreme variation of investment costs, which vary between 7 300 euro and 1.15 mio. euro per km of water-pipe and between 6 700 euro and 682 000 euro per km of canal pipe.²⁶

Contrary to the general trend of privatisation and deregulation there are (as yet) hardly any private companies in the market. For reasons such as public debt and the Maastricht criteria there was however a tendency to convert (pure) public companies under public law to companies under private law with the public still being sole proprietor.

With respect to the evolution over time, the whole sector must be considered rather static and due to the huge investments and long-term usage of water-facilities, developments materialise rather slowly. Thus, although many companies in the water sector switched from public to private law for the reasons mentioned above, the overall structure may be regarded as fairly constant over time. In almost any Austrian town either the municipality itself or an association of municipalities provides water services to the public. Solutions with Private Social Partnerships and PPPs are being discussed but have been implemented only in a handful of cases - interestingly the private partners in these PPPs are mostly subsidiaries of public/publicly-owned companies.

One exception to the static nature of the sector is the increasing territorial accessibility²⁷ to centralised water provision and sewage, which led to a decrease in decentralised cooperatives and house wells. This development however, is not really a result of any kind of liberalisation but is merely a product of the improvement and

²⁶ See Puwein et al. (2002), p. 161. Controlling for various differences also does not account for such exponential cost curves.

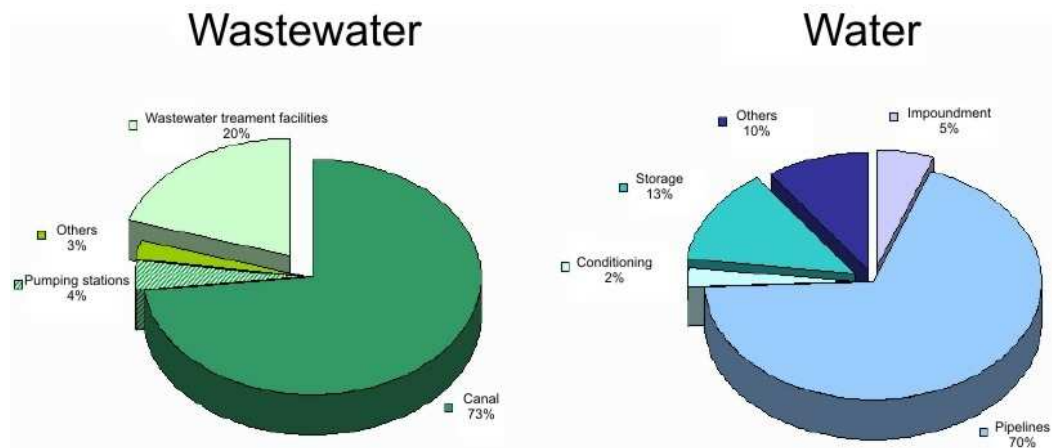
²⁷ See section 4.4.

expansion of infrastructure as well as tendencies towards urbanisation.

A very important issue with respect to supply and its structure is the investment activity and related state funding. Between 1993 and 2006 - i.e., since the inclusion of the water sector in the environmental assistance act (Umweltförderungsgesetz) - about 2.3 billion euro were invested in water distribution and about 12.2 billion euro in sewage.²⁸ The net present value of state support is 0.4 billion euro and 4.0 billion euro for the two sectors respectively.²⁹

Figure 2: Distribution of investment on assets

Source: Kommunalkredit Public Consulting (2007)



The distribution of the investment among different types of physical assets is illustrated in figure 2.

Estimates for the years 2007 to 2015 predict decreasing investment, especially for sewage. Compared to the high investments for new constructions and facilities, the main focus of future investment is likely to be on reconstruction and restoration. Investments between these years are estimated to amount to 3.7 billion euro in sewage and 1.3 billion euro in distribution/provision.³⁰

²⁸ See Kommunalkredit Public Consulting (2007), p. 8.

²⁹ Net present value because the financial support is paid out over decades (usually 28 years).

³⁰ See figure 6 and Kommunalkredit Public Consulting (2007), p. 07f.

3.4 Output

The total volume of water flow (=production) amounted to approx. 3 500 mio. m³ in 1997.³¹ For household consumption 670 mio. m³ were supplied through centralised water provision (i.e., municipalities and associations) and a further 70 mio. m³ through decentralised small-scale units (i.e., water cooperatives and house wells).³² The corresponding wastewater volume was 14.9 mio. p.e.s (one p.e. being around 150 - 200 l/d), half of which being attributable to industry, business and tourism.³³ In Austria, drinking water is either ground water (51%) or spring water (48%). Less than 1% of the supplied water is surface water.

3.5 Regulation issues with respect to tariff and price structure

The legal basis for water tariffs is the Austrian revenue sharing law (Finanzausgleichsgesetz) of 2008, which states that municipalities may charge tariffs up to twice the yearly financial requirements for running the water operations - i.e. maintenance and operations as well as interest and repayment of construction costs. In general the fees follow the equivalence principle and thus have to be related to the provided service. Another regulation is a prequalifying condition when municipalities apply for state funding. In this case the maximum charge is 350 euro for an average household per year and 2 500 to 2 900 euro for the nonrecurring connection fee.³⁴ On the other hand, most federal province funding laws contain clauses indicating minimum charges as a condition for support.

3.6 The regime of wage bargaining

Basically Austrian law distinguishes three types of employees: civil servants, employees under public law and employees under private law. Civil servants have a special status due to their close relation to sovereign functions of the state - e.g., dismissal protection. Some of these privileges, but in a much weaker form, also apply for employees under public law, who represent a rather recent shift from the paradigm of civil servants to private sector employment contracts in the public sector. Wage bargaining

³¹ See Schönböck et al. (2003), p. 11.

³² See OVGW (2004), p. 16 and Schönböck et al. (2003), p. 48.

³³ See BMLFUW (2006a), S.11.

³⁴ See Sagmeister (2003), p. 123ff.

in Austria is organised in sector-specific negotiations and wage agreements. In the case of a change of organisational form from public to private law, there are clear regulations that protect the employees/civil servants from worse contract and working conditions.³⁵

In general, wages in the water sector are relatively high compared to other economic sectors. The average (gross) wage in 2006 for water and electricity employees was 17.67 euro per hour and ranked first above all other categories.³⁶

4. Financing

The financing structure of the Austrian water sector rests on two pillars: direct tariffs on the one hand and investment funding by the federal state and the provinces on the other. The next subsection gives a general overview of the cost and revenue (fee) structure. The Austrian system of national investment funding assistance is then reviewed. The anchor for any tariff-setting in the water sector is the principle of cost coverage - which is strongly promoted by the European water framework directive and shall be implemented by 2010³⁷ - the issue of cost recovery is addressed in the last part of this section.

³⁵ See BMLFUW (2001), p. 28.

³⁶ See Statistik Austria (2009b), p. 243.

³⁷ See also § 55e federal water law.

4.1 Cost and tariff structure

Figure 3: Cost structure in the water sector

Source: BMLFUW (2003b)



A very basic overview of the cost structure in both water provision and sewage is presented in figure 3. It distinguishes capital cost, operational cost and cost for external services. One very striking difference between the two sectors is the twice as high capital costs in the sewage sector

(Austrian average). When considering different provinces the cost shares vary substantially across provinces in either of the two sectors.

Figure 4: Revenue structure in the water sector
Source: BMLFUW (2003b)



As the task of water provision and sewage is an assigned duty from the provinces to the municipalities, the municipalities are authorised by §§ 7 and 8 of the revenue sharing law to collect fees. The structure of these fees - the first pillar of financing - is shown in figure 4. The three groups of revenue

are recurring fees, nonrecurring connection fees and revenues from external services to others. Regular recurring fees amount to about 80% to 90% of total revenue. As for cost, the regional variation is again quite considerable.

The overall development of revenues is shown in table 5. While revenues from water provision grew moderately by 26% from 301 mio. to 380 mio. euro, revenues from sewage and wastewater disposal more than doubled and amounted to 960 mio. euro in 2006.

Table 5: Evolution of revenues 1995 - 2006

Mio. €	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Water	301	298	295	318	327	351	365	364	375	383	368	380
Sewage	406	437	631	700	721	808	841	849	892	901	901	960

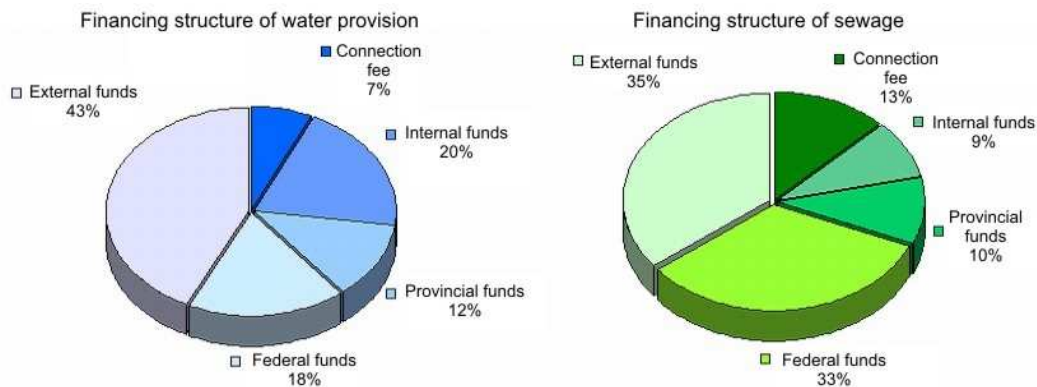
Source: Statistik Austria (2007a)

4.2 Investment funding and assistance

Due to the high capital intensity of the water sector, financing of investments plays an important role. Figure 5 shows the financing structure of the Austrian water sector. As can be seen from the representation, outside financing volume (investment minus equity and connection fees) is tremendous and federal and provincial funds also play an important part. To repay the outside debt regular fees and investment assistance funds, which are paid over a longer time period, are used.

Figure 5: Financial structure in the water sector

Source: Kommunalkredit Public Consulting (2007)



The core of the federal investment assistance system is the environment- and water-fund, which is financed by the income tax. The annually determined environmental assistance act contained the following amounts for funding in the water sector:

Table 6: Federal environmental funds for the water sector

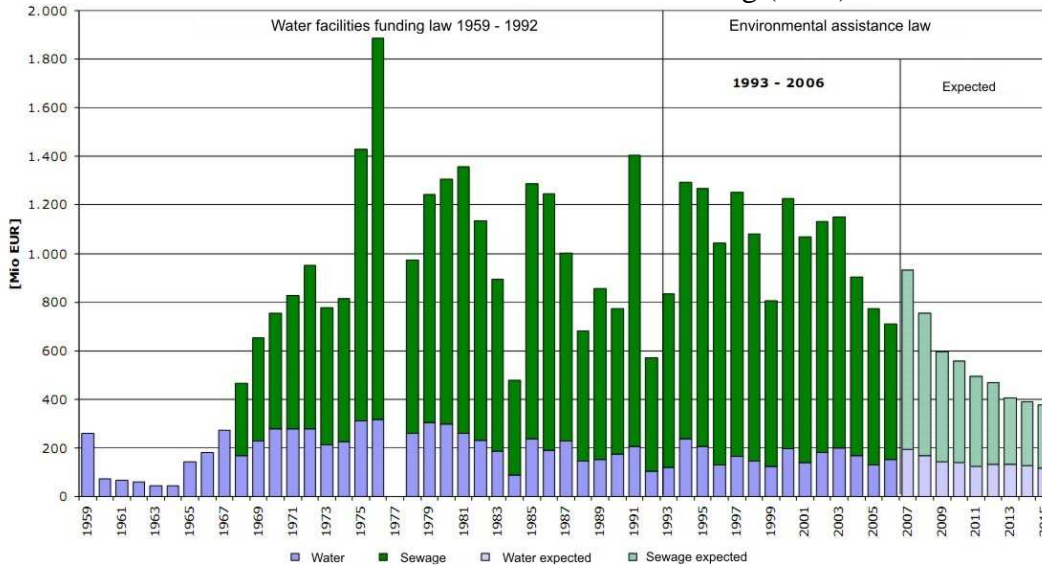
1993 to 2000	€ 283 mio.
2001	€ 254 mio.
2002 to 2007	€ 218 mio.
2008 and 2009	€ 215 mio.
2011 and 2011	€ 180 mio.
2012 and 2013	€ 135 mio.

Source: § 6 UFG

The payouts are either in the form of a one-off investment grant or long term investment subsidies. As a feature of the system, federal investment assistance is not only processed at provincial level but also coupled with and conditional upon provincial funding to assure preselection and incentive compatibility. The gradual decrease of funds over the coming years is due the expectation that investment will decrease until 2015. Figure 6 shows the evolution of investment and financial needs over time and also includes an estimation until 2015. According to this picture, investments in sewage in particular will be phased out over the coming years and thus the need for state investment funding support is expected to decrease likewise.

Figure 6: Investment needs in the water sector

Source: Kommunalkredit Public Consulting (2007)



Apart from federal investment assistance, European co-financing and provincial funding plays a role. EU funds for the water sector are available exclusively for the provinces Burgenland (=objective 1 region) and Tirol (=objective 5b region). From 2000 to 2006 funding amounted to a maximum of 23.1 mio euro. Past evaluations show an average share of EU funding of about 15% of total project costs.³⁸ With regards to provincial funding, there are - as expected - significant differences between regions; however, the assistance criterias are usually similar to the federal requirements. The assistance shares in sewage vary between 7% in Upper Austria and 22% in Salzburg, and are similar to the shares in the less capital-intensive water provision. There is no provincial funding at all in Vienna.

4.3 Cost Coverage

Based on the cost and revenues table 7 shows cost coverage ratios for the two sectors for 2002. It is important to mention, however, that the exhibited values are appraised by cameralistic accounting standards, which is more or less a simple accounting on a cash basis. Hence, the term expenditure coverage would be more appropriate, as a transmission of expenditures into cost is not possible in this case.³⁹

The cost coverage ratio of total revenue is more than 100% for both water and sewage. To account for the high variation of nonrecurring connection fees over time, the cost coverage ratio based on regular fees is also exhibited. In this case, the recurring fees cover 92% in the water and 84% in the sewage sector.

Table 7: Cost coverage in the water sector in 2002

	Water	Sewage
Cost in € per person	66.4	157.7
Total Revenue in € per person	71.7	161.0
Recurring fees in € per person	61.1	132.6
Total cost coverage	108%	102%
Cost coverage by recurring fees	92%	84%

Source: BMLFUW (2003b)

³⁸ See BMLFUW (2003b), p. 71f.

³⁹ See BMLFUW (2003b), p. 111ff.

To conclude the section on financing of water and sewage services, the funding in the water sector has changed markedly in recent years. Especially the emphasis on cost transparency, cost awareness and cost coverage has led to a more cost-by-cause-driven tariff and fee structure. These developments have not (adversely) affected the investments undertaken, which are secured by a generous and efficient (with respect to accessibility and prevention of underinvestment) funding system. As the increase in revenues indicates, the fees in the past did not suffice to cover all expenditures, especially as regards financing capital intensive investments.

5. Monitoring of provision, quality and development of accessibility to/of services

5.1 Structure of demand

A rough division of water usage in Austria shows a share of 56% for industry, 39% for households (including small businesses) and 5% for agriculture.⁴⁰ Water demand in terms of consumption is presented in table 8. The difference between average household and average total consumption is due to the inclusion of industry and businesses in the latter. Thus the calculation of household consumption is based on small towns without significant industry or business consumption. When considering demand evolution over time, household consumption remains fairly constant, while the business sector tends to decrease its usage, resulting in a reduction of average total consumption in recent years.⁴¹

Table 8: Water consumption and usage 2002

	Water[m ³ /E,a]	Wastewater[m ³ /E,a]	Usage[l/p,d]
Household consumption	54.3	54.8	148.8
Total consumption	69.4	67.9	190.3

Source: Own representations based on BMLFUW (2003b)

⁴⁰ See BMLFUW (2006b), p. 6.

⁴¹ See Schönböck et al. (2003), p. 104.

5.2 Attractiveness of services

The periodical survey "AQA water report" regularly assesses the attitude of Austrians with respect to water issues.⁴² Regarding water quality, 90% of the Austrian population find the water quality either "good" or "very good" and 97% would rank Austrian water quality first in Europe. Satisfaction with water providers averages 1.4 (on a scale from 1 to 5), with water quality being the most important criteria. The survey also reveals that Austrians are quite aware of water-relevant issues, such as the like origin of the water, etc.

5.3 Development of prices and affordability

As a result of the appreciable differences in water price schemes and calculations, most comparisons refer to annual costs of a fictive household.⁴³ The development of such average fictive annual cost of water provision and sewage is shown in table 9.

Table 9: Average annual cost of a fictive household

in €		1995	2000	2001	2002	2003	2004	2005	2006
Water									
	Mean	122	143	153	160	164	167	172	178
	Median	123	150	150	161	163	166	168	175
	SD	48	52	42	42	43	44	42	43
Sewage									
	Mean	164	198	218	222	239	243	244	254
	Median	158	196	199	212	220	219	225	238
	SD	80	95	89	87	100	105	108	112

SD= Standard Deviation; Own calculations based on Statistik Austria (2007b); cities with more than 10.000 inhabitants

A comparison of an overall consumer price index and prices for water-related services is given in figure 7. The graph reveals that the prices for such services have increased substantially stronger than overall consumer prices. Since 1995, prices for the provision of freshwater have risen by roughly 45% on average. The increase was even stronger for sewage services, which rose by roughly 55%.

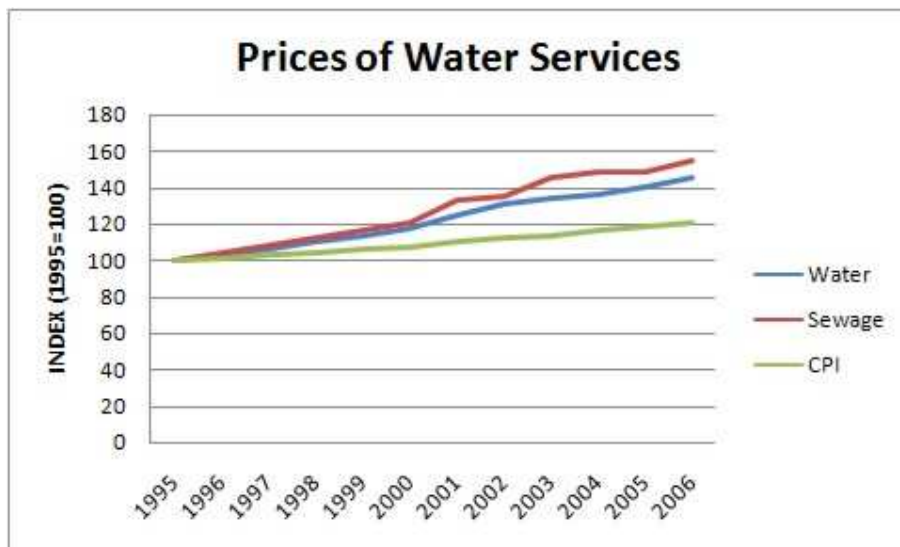
⁴² See OVGW (2008).

⁴³ Fictive households are characterised by an annual water consumption of approximately 150m³.

With respect to affordability and social compatibility of water prices (fees, tariffs), there is basically no subject-oriented assistance for social reasons. In reality there are, however, possibilities of a price reduction for certain groups of persons.⁴⁴ In the case of households, denial of service is not possible for reasons of hygiene (sewage) and service obligations (water provision). In most cities and municipalities, people who experience difficulties in paying their bills may request a remission of charges or an absorption of charges by the social welfare office. As a result of the investment funding programmes in the water sector, prices in rural areas are supported much more than in urban areas.

Figure 7: Development of Prices of Services

Own Calculations based on Statistik Austria (2007b); Values between 1995 and 2000 are geometrical interpolations.



5.4 Development of territorial accessibility

The degree of connection to public water distribution, a canal system and sewage plants has increased steadily during recent years. Since 1990 the percentage has risen from 83% to 90% in water provision/distribution and from 71% to 89% in sewage.⁴⁵ Table 10 shows the evolution of accessibility over time.

⁴⁴ See Schönback et al. (2003), p. 122f.

⁴⁵ See Schönback et al. (2003), p. 40, Kommunalkredit Public Consulting (2007), p. 13 and BMLFUW (2008b).

Table 10: Evolution of Access to Services

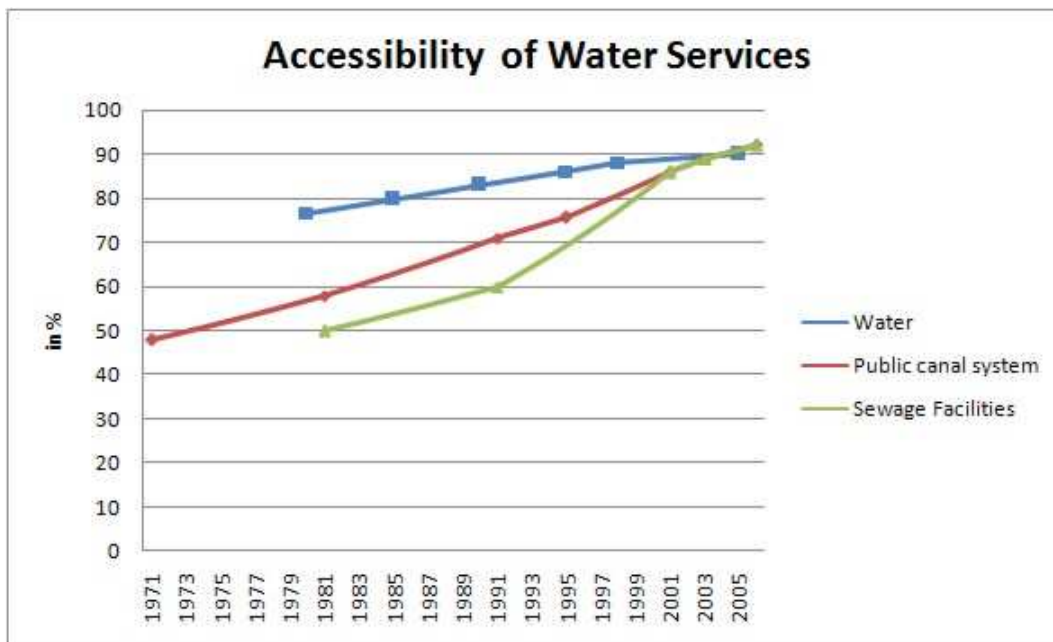
% of population served Water	1980	1985	1990	1995	1998	2005*	
	76,7	79,8	83,0	86,1	88,1	90,0	
% of population served Public canal system	1971	1981	1991	1995	2001	2003	2006
	47,9	57,9	71,0	75,7	86,0	88,9	92,0
% of population served Sewage facilities	1968	1981	1991	2001	2003	2006	
	3,0	50,0	60,0	86,0	88,9	92,0	

Sources: BMLFUW (2003b) and BMLFUW (2008a); * = Kommunalkredit Public Consulting (2007)

For ease of comparison figure 8 highlights the developments. The main reason for the strong increase in accessibility was of course the investment activity pointed out in section 2.4 and increased requirements for water quality. For decentralised production units such as small-scale cooperatives especially, and even more so for House wells (which together represent the difference between 100% and the connection ratios mentioned above), varying quality and availability - e.g. due to heat periods - is an issue.

Figure 8: Development of Accessibility of Services

Source: BMLFUW (2003b) and BMLFUW (2008a)



5.5 Development of quality of services

5.5.1 Quality of drinking water

Although the drinking water quality is perceived to be (very) high in Austria, before 2000 there was no nationwide assessment. Only after implementation of the European drinking water directive did the ministry responsible for health, the family and youth (BMGFJ) start any systematic analyses. The results so far - each report analysing three years: 1999 to 2001 and 2002 to 2004 - reveal that the water quality is indeed excellent, with a few exceptions. These exceptions concern contamination through agricultural pesticides, with Upper and Lower Austria being the worst affected areas. All of the water providers concerned dispose of an exceptional permission and measures have been taken to meet the required threshold values. The actual task of measuring and controlling drinking water quality lies with the operators of water provision facilities.⁴⁶ The operator is required to appoint a qualified inspection office or person to assess water quality.

5.5.2 Leakage

Another important indicator of service quality is water leakage. High percentages of water leakage may be interpreted as a sign of underinvestment. The leakage in % of the total distribution volume are shown in table 11.

Table 11: Water leakage 1990 to 1997

	1990	1991	1992	1993	1994	1995	1996	1997
Leakage in %	11.1	11.4	9.2	9.1	8.4	9.3	9.8	9.5

Source: Schönböck et al. (2003), p.42

⁴⁶ § 5 Austrian drinking water directive.

6. Case Studies

6.1 Vienna

6.1.1 Responsibility

In Vienna, the Magistratsabteilung 31 (MA 31; a department of the public administration in Vienna) bears responsibility for planning and organising the water provision and distribution, while MA 30 is responsible for the sewage and canal system. Both are organised as a Magistrats- and Regiebetriebe respectively, which means that they are organisations under public law and are part of the public administration. The main sewage plant of Vienna is owned by Simmering Ges.m.b.H., a company under private law and limited liability, which is a 100% subsidiary company of the City of Vienna. Due to the organisational and legal structure the most important business decisions - such as investment and price and fee structure - are negotiated and made in the Gemeinderat (=city council).⁴⁷

6.1.2 Form of market and provision

Under the Vienna Wasserversorgungsgesetz (Water provision law), the provision of water and sewage services in Vienna is monopolised through compulsory connection to the publicly provided services. Moreover, only recently additional protective clauses were enacted which concern local water supply facilities. Since 2001, the necessary quorum (=minimum number of votes) for decisions concerning the privatisation of facilities in public ownership was raised to two-thirds. In general, companies under private law, such as the Kläranlagenbetriebsgesellschaft (=sewage operating company), do exist, but all are corporatised public companies, which are still owned 100% by the City of Vienna.

6.1.3 Monitoring and regulation

Due to the organisational and legal form of a Magistratsabteilung, there is a high degree of political intervention, influence and control. In this respect and due to the use of the cameralistic bookkeeping system, there are some concerns regarding transparency and auditability in the matter of financial

⁴⁷ See Katzmayr (2005), p. 161f.

reporting and balancing. However, this organisational structure is characterised by clear political responsibility and by the possibility of public control and intervention.⁴⁸

6.2 Public-Private-Partnership Ernsthofen

6.2.1 Responsibility

As one of the very few public-private-partnerships in Austria in general, and in the water and sewage sector in particular, the municipality Ernsthofen was part of a pilot programme of the BMLFUW.⁴⁹ In 1997, the small municipality with a population of 3 700 people started a cooperation model with the private operator Ökoreal. The cooperation concerns the sewage and canal system for the next 15 years. Due to the contract provisions, the municipality still has a decisive influence on provision of the service and remains responsible for the sewage and canal services - the cooperation company with the private partner is only considered as assisting the municipality, which bears primary liability.⁵⁰ The municipality remains responsible for the collection of canal fees and covers the cost for the cooperation company by monetary compensation.

6.2.2 Form of market and provision

As in Vienna, provision is also monopolised in the municipality Ernsthofen. Compulsory connection and usage allows no choice concerning an alternative provider. Again, as in Vienna and in most other cities/municipalities in Austria, the fees and charges are decided in the local council. While water is provided and operated exclusively by the municipality through the locally administered companies, a private operator is involved in sewage and in the canal system, as mentioned earlier. The selection of a private partner was effected by means of a public tender, even though it would not have been necessary from a legal perspective.

⁴⁸ See Katzmayr (2005), p. 162.

⁴⁹ See BMLFUW (2001), p. 77.

⁵⁰ See BMLFUW (2001), p. 81.

6.2.3 Monitoring and regulation

In the centre of the public-private-partnership there is a cooperation company, founded for that very purpose, of which 51% is owned by the municipality of Ernstshofen and 49% by the private partner Ökoreal. The management consists of one representative of the municipality and one representative of the private partner. While the municipal representative is mainly concerned with supervision and control functions, the private partner takes care of the operative business. This division is meant to ensure that the private partner contributes his resources and skills to ensure the efficient and economically sound management of the company, while the public partner ensures that the stakeholders' interests are served. After the contract expires after 15 years, or if the contract is dissolved prematurely, the constructed facilities pass over into the property of Ernstshofen, which compensates the private partner according to his nominal share.

7. Conclusion

Summing up, the above sections have tried to give an outline of the provision of water services in Austria. To begin with, the legal framework in Austria is relatively clear about the juridical responsibilities, with the provinces possessing the main legislative and executive competences and the federal State exercising mostly supervisory tasks. Nevertheless, the provinces delegate the actual water services, their implementation and organisation to the municipalities. The legal bases for government aid and public procurement regulations have also been broadly sketched. In the succeeding section, the most important features of the actual organisation - such as organisational forms or the structure of supply - have been analysed to give an insight into the Austrian water market and illustrate how the regulations affect business conduct. As shown, local provision through municipal companies - in recent years rather in the form of private companies with public ownership -, associations and, to a lesser extent, also cooperatives are the predominant organisational forms in both water and sewage.

In the section on the financing of water services, the two pillars of the Austrian system have been explained in depth. The two most important aspects in financing would appear to be cost recovery - as brought forth by the European Union - and the financing of capital intensive water and sewage facilities through public funds. The dominant developments in the Austrian water sector over the past 20 years are closely related to these two

points. Moreover, the generous funding is one of the main reasons why small-scale operations in Austria are still frequently encountered in the water sector. Finally, some additional important aspects of water provision such as quality, monitoring of provision and accessibility have been analysed, after which two case studies attempted to complete the picture in the final section.

Regarding the most important trends in the Austrian water sector, it appears that the financing system has undergone the most severe changes, which is indicated by the strong (price-led) increase in revenues from fees and the public investment activities. A further conspicuous long-term development is the rise in accessibility to public services, which is around 90% for both water and sewage. However, demand, quality and form of provision - also with regard to the organisational type - are evidently rather stable. To conclude, it is expected that the provision of water-related services will not be subject the major changes in the near future - neither with respect to EU regulations nor to the economic crisis.

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