

INFORMATION ON ENVIRONMENTAL POLICY

197b

COMPARISON OF EUROPEAN WATER SUPPLY AND SANITATION SYSTEMS

Final report (abridged version)

Michael Getzner, Bettina Köhler, Astrid Krisch, Leonhard Plank

Comparison of European water supply and sanitation systems

Final report (abridged version)

Michael Getzner, Bettina Köhler, Astrid Krisch, Leonhard Plank

Vienna University of Technology
Department of Spatial Planning
Centre of Public Finance and Infrastructure Policy
Augasse 2-6
1090 Vienna, Austria



Website: <https://raum.tuwien.ac.at/>



Technische Universität Wien
Department für Raumplanung
Finanzwissenschaft und Infrastrukturpolitik

Project manager: Dr Leonhard Plank

Authors: Professor Michael Getzner
Dipl.-Ing. Bettina Köhler (University of Vienna)
Dipl.-Ing. Astrid Krisch
Dr Leonhard Plank

Research assistant: Florian Bohinc, BSc

External experts: Professor Bernhard Barraqué (Centre International de Recherche sur l'Environnement et le Développement, Paris / Nogent-sur-Marne, France)
Professor Judith Clifton, PhD (Faculty of Business and Economic Sciences, University of Cantabria, Spain)
Dr Andras Kis (Water Economics Unit, Regional Centre for Energy Policy Research (REKK), Corvinus University, Budapest, Hungary)
Professor Adam Leaver, PhD (Sheffield Political Economy Research Institute, United Kingdom)
Hugo Silvestre, PhD (Centre for Policy and Public Administration, Universidade da Integração Internacional da Lusofonia Afro-Brasileira (UNILAB), Redenção, Brazil)
Dr Gábor Ungvári (Water Economics Unit, Regional Centre for Energy Policy Research (REKK), Corvinus University, Budapest, Hungary)

Commissioned by: Vienna Chamber of Labour (Department of Environment and Transport),
Austrian Association of Cities and Towns, younion_Die Daseinsgewerkschaft

Editing/layout: Sabrina Pochop (Vienna Chamber of Labour)

Translation into English: Connect-Sprachenservice GmbH

Available from: Vienna Chamber of Labour
Department of Environment and Transport
1040 Vienna, Prinz Eugen-Strasse 20-22
Phone: +43 1 / 501 65 12401
E-mail: uv@akwien.at

Suggested citation: *Getzner, Köhler, Krisch, Plank* (2018): Comparison of European water supply and sanitation systems – Final report (abridged version)
In: Information on environmental policy, 197b.
Vienna: Vienna Chamber of Labour.

Last updated: December 2018

Media owner: Vienna Chamber of Labour

1040 Vienna, Prinz Eugen-Strasse 20-22

Printing: Published by the media owner; Published and produced in Vienna

ISBN: 978-3-7063-0745-1

FOREWORD BY THE COMMISSIONING BODY

Public services, particularly water supply and sanitation, are indispensable for the population. Austria's water supply is very high quality and affordable, and provides a comprehensive supply. It is also in a strong position compared with other European countries, as the results of this study show.

Thanks to the success of the European Citizens' Initiative "Right2Water – Water is a human right", the campaign to exempt water and wastewater providers from deregulation and the obligation to tender was successful. The water sector then settled down somewhat, at least temporarily. With the forthcoming review of the Concessions Directive, the exemption made for the water and wastewater sector is once again being called into question. At the same time, there is a risk of back-door deregulation via free trade agreements with Canada (CETA) and Japan (JEFTA). As a result, water supply is becoming a tug of war between investors' interests and public services.

International studies show the negative effects of privatising public services, including increased prices, deteriorating supply for the population and reduced investment in infrastructure. As such, there has been a clear trend towards re-municipalisation in recent years. In France and Germany alone, more than 120 cities and local authorities have transferred their water supply systems back into public ownership in the last 15 years.

As public ownership makes a comeback, financial investors are becoming increasingly involved in private water companies and are bringing about a change in business models, which can be seen most clearly in England. These new developments can be categorised as "financialisation". Previous experiences with the new models have shown how important it is to protect vital public services from such developments.

The water supply in Austria has been state-owned since the beginning, and has been well established for many years. Consumers are very satisfied with the quality of their water supply. One recent study by the Austrian Association of Cities and Towns shows that 97 % of consumers are satisfied or very satisfied with their drinking water supply and 94 % with their sewage maintenance. In order to maintain these good figures in future, water supply should remain in state ownership.

Renate Anderl

President

Vienna Chamber of Labour

Thomas Weninger

Secretary general

Austrian Association of Cities
and Towns

Thomas Kattinig

Unit manager

younion_Die Daseinsgewerkschaft

AUTHORS' FOREWORD

In recent decades, there has been frequent discussion of the “correct” way to organise and manage municipal water supply and sanitation. This discussion has been supplemented by a number of scientific studies and various political initiatives (e.g. regarding competition and procurement law). Around fifteen years ago, a comparison of water management systems in Europe was produced by Schönböck et al. (2003), investigating municipal water supply and sanitation systems using a variety of criteria and indicators.

Since this study, there have been developments both with regards to further market liberalisation and privatisation as well as a rise in re-municipalising public utilities as part of public infrastructure.

The current study also presents a comprehensive comparison of six selected European systems (Germany, England/Wales, France, Austria, Portugal and Hungary). Its purpose is to analyse water management systems and address the questions of whether one particular system for organising these systems should be favoured over any other in order to improve sustainability (from an environmental, economic and social standpoint) and, if so, which criteria or indicators should form the basis of such a policy.

In addition to considering various systems for water management, we also consider policies in the European multi-level governance system, new forms of financialisation (e. g. the emergence of financial investors and their business models in the water sector) and re-municipalisation as well as different forms of outsourcing and privatisation (e.g. public-private partnerships, PPPs).

First and foremost, the authors would like to thank national and international experts for their commitment to the project and for the varied discussions and comprehensive information they provided. Their generosity has helped to ensure that the present study was based on a broad range of evidence.

We also owe particular thanks to the organisations which commissioned the present study, the Vienna Chamber of Labour, the Austrian Association of Cities and Towns and *younion_Die Daseinsgewerkschaft*. We would like to offer our heartfelt thanks to I. Strutzmann, G. Dernbauer, M. Wipplinger and S. Leodolter for wide-ranging discussions, assistance and feedback.

Michael Getzner, Bettina Köhler, Astrid Krisch, Leonhard Plank

Vienna, December 2018

PLEASE NOTE

The current study was produced on the basis of good scientific conduct. This means it was conducted in accordance with the current state of science and using scientific methods, and is based on the best information available. All sources of data have been cited accordingly. However, the authors cannot guarantee the complete absence of errors in the data or calculations, diagrams or results. As such, the authors do not accept any responsibility for any consequences arising from the use of the content in this report. The copyright for this report is held by the authors. The views, opinions and conclusions expressed in this report are exclusively those of the authors and not necessarily those of the commissioning organisations.

The study was published in German in September 2018:

- Informationen zur Umweltpolitik, no. 197
“Vergleich europäischer Systeme der Wasserversorgung und Abwasserentsorgung – Endbericht (Langfassung)”
Download: <https://resolver.obvsg.at/urn:nbn:at:at-akw:g-2556416>
- Informationen zur Umweltpolitik, no. 197a (abridged version)
“Vergleich europäischer Systeme der Wasserversorgung und Abwasserentsorgung – Endbericht (Kurzfassung)”
Download: <https://resolver.obvsg.at/urn:nbn:at:at-akw:g-2555202>

CONTENTS

Foreword by the commissioning body	3
Authors' foreword	4
Please note	5
Contents	7
Abstract	9
1 Introduction	11
2 Water supply and sanitation as a public responsibility	13
2.1 Reasons for state infrastructure policies in relation to water	13
2.2 Institutional options for water supply and sanitation	16
2.2.1 Regulatory requirements and frameworks	16
2.2.2 Aspects of management	20
3 Policies and Politics in European water policy	23
3.1 Policy processes and regulatory frameworks in the context of the EU	23
3.2 EU internal markets: Policy processes and regulatory frameworks	26
3.2.1 Evaluation processes for the water sector since the year 2000	26
3.2.2 The Services Directive	28
3.2.3 Reorganisation of public procurement law	29
3.2.4 The Concessions Directive	30
3.2.5 State aid law	31
3.2.6 A look ahead at adjustments to the Drinking Water Directive and the Water Framework Directive	33
3.3 EU trade policy: Policy processes and regulatory frameworks	34
3.4 Excursus: Politics and the role of specific players in water policies	36
3.4.1 On the role of the European Commission	37
3.4.2 On the role of proactive corporate strategies	38
3.4.3 International law firms and consultancy firms	39
3.5 Classification of policies in the water sector between 2000 and 2018	39
4 The water supply and sanitation systems in selected European countries	45
4.1 Method of study: Systems comparison	45
4.2 Summary of the systems comparison using selected indicators	46

5	Water supply and sanitation between deregulation, PPPs and re-municipalisation	59
5.1	Origins of modern water supply and sanitation	59
5.2	The great deregulation experiment since the 1980s	60
5.3	Public-private partnerships (PPPs)	61
5.3.1	Empirical relevance of PPPs in water supply and sanitation	63
5.3.2	Studies on the effects of PPPs in a systems comparison	68
5.4	Re-municipalisation in water supply and sanitation	71
5.4.1	France	71
5.4.2	Germany	73
5.4.3	Hungary	74
5.4.4	Portugal	74
5.4.5	England and Wales	75
5.4.6	Austria	76
6	Financialising the water supply and sanitation industry	77
6.1	Financialisation as a new phenomenon in the provision of infrastructure	77
6.2	Variations of financialisation in water and sanitation systems	78
6.2.1	Key example: England	78
6.2.2	The French model: Global corporate structures and the local water industry	81
6.3	Interim conclusions	83
7	Conclusions and recommendations	85
7.1	Conclusions for planning, investing in and operating municipal water supply and sanitation systems	85
7.2	Recommendations for sustainable water supply and sanitation systems	87
Lists		89
	Literature and sources	89
	List of tables	117
	List of figures	118
	Information on environmental policy	119

ABSTRACT

The organisation of water supply and sanitation have been the subject of intense public debate over the last few years in various contexts (e.g. European Citizens' Initiative "right2water", EU Concessions Directive, Free Trade Agreements such as CETA, Revision of the Drinking Water Directive). Against this background, the objective of the present study is to compare different national water supply and sanitation systems. The study builds on the extensive investigation by Schönböck et al. (2003), but goes beyond it in several regards: In particular, water policies are analyzed in the context of the European multi-level governance system. In addition, a historical-institutional part allows for the classification of the liberalization agenda since the 1980s and the re-municipalization trend in the last decade. Finally, the intrusion of financial market players under the heading of financialisation of public infrastructure services is analyzed.

On the basis of the national system comparison, the excellent efficiency, quality and affordability of the public (municipal) systems of Austria and Germany can be ascertained. Both the theoretical analysis and the empirical evidence point to the central problems of material privatization (England) and contractual PPPs (public-private partnerships in France, Portugal and Hungary). Against this backdrop, remunicipalisation has gathered momentum since the mid-2000s in Europe. These findings are hardly reflected in key economic policy fields in the European multi-level system (in particular the EU internal market and EU foreign trade policy). Despite political and media conflicts centered on an agenda for a common good conception of key infrastructures, a consistent, uni-directional trend towards more market-creating liberalization policies can be observed over the past two decades. This is also in line with the politically driven re-regulation and opening of important infrastructure areas, including water supply and sanitation, for financial investors. The present empirical evidence in the water sector as well as the general literature on financialisation suggest that public services should be better insulated from the fluctuations of the financial markets, rather than tied to them.

1 INTRODUCTION

Following the successful European Citizens' Initiative "**right2water**" (2013) and the European Parliament's adoption in 2015 of a motion inspired by this initiative calling for the basic human right to access clean water and sanitation, issues concerning the organisation of water supply and sanitation have once again become a key focus for debate. While a large number of citizens, various civil society organisations and companies supported the MEPs' majority decision to give the "good of water" a special status, the European Commission pushed for deregulation of national water supply and sanitation systems, particularly by implementing the **Concessions Directive**. The political and media debate on the Concessions Directive also highlights the various dimensions and points of view regarding questions of organising key areas of public services, including issues of governance and views on sustainability (economic, environmental and social).

In light of the upcoming revision of the Concessions Directive, which will also reconsider expanding its scope to cover water supply and sanitation, the current study aims to **compare different national systems** for water supply and sanitation. In doing so, the study draws on the extensive study by Schönböck et al. (2003), but builds on this in a number of respects. Specifically, it will analyse water policies in the context of the European multi-level governance system. Additionally, a historic and institutional section allows for the classification of the liberalisation agenda since the 1980s as well as of the more recent trend towards re-municipalisation. Finally, the intrusion of financial market players will be analysed under the heading of financialising public infrastructure services.

The **debate around the turn of the millennium was heavily influenced by the supposed benefits of innovation and efficiency**, which were predicted as a result of bringing in private capital and private enterprise as well as increased market competition (Ewers and Mankel, 2001; Ewers et al., 2001, etc.). At that time the focus was less on the total material privatisations seen in England and Wales since the 1990s, with discussion concentrating on other methods of privatisation, particularly in the form of various PPP-based solutions. In Austria, the discussion was driven in no small part by a study drawn up by an international consultancy firm on behalf of the Austrian Federal Minister for Agriculture, Forestry, Environment and Water Management. That study recommended a compulsory switch to PPPs for Austria's water supply and sanitation system (PwC, 2001).

Since the onset of the global economic and financial crisis of 2008 at the latest, these arguments have faded into the background – not least because the supposed economic advantages of private companies and **market solutions in public services** have generally been **viewed more critically**. As is shown in the current study using a variety of quantitative and qualitative criteria and indicators, this is especially the case for the water supply and sanitation sectors.

It is in this context that the discussion regarding **re-municipalising** public services, including water supply and sanitation, should be considered. Over the past 15 years, this debate has gained particular momentum in France, the key country and historical exception of private water companies.

At the same time as the return to public ownership, further **restructuring measures** are also taking place in this sector, indicating movement in the opposite direction. These should particularly be considered in light of tight public budgets and national and European fiscal rules which limit the scope for traditional public funding and provision. Alongside the gradual, less well-publicised cases of small municipalities in Austria (where, for example, suppliers have been corporatised and local suppliers have been acquired by national companies), the efforts made by the Troika in Greece and Portugal should also be mentioned¹.

Finally, one specific aspect concerns the increasing intrusion of financial market players into important infrastructure sectors and the adoption of their management doctrines and organisational practices. This phenomenon, referred to as “**financialisation**”, can also be seen increasingly in the water supply and sanitation industry.

In order to do justice to these differing and complex aspects, the present study takes a multidisciplinary and integrated approach, extending beyond the classic economic analysis of infrastructures. The following questions are at the centre of the study:

- How can the water supply and sanitation industry be classified from the point of view of infrastructure economics and what general and specific characteristics does it display? Which forms of organisation are there and what advantages and disadvantages do these have? (Chapter 2)
- Which key policies are being negotiated in the water supply and sanitation industry within the European multi-level governance system? How are policies made in light of the tension between the demand for “integration of the single market” and the emphasis on a “public service for the common good”? (Chapter 3)
- How do the systems for water supply and sanitation in Austria, Germany, France, England/Wales, Portugal and Hungary differ based on a multi-dimensional set of indicators? (Chapter 4)
- What significant historical stages have characterised the modern water supply and sanitation industry in Europe since the 19th century? How do public-private partnerships (PPPs) perform in the various systems being studied and how relevant is the phenomenon of re-municipalisation? (Chapter 5)
- What is the significance of the increasing part played by financial markets players in the water supply and sanitation industry? (Chapter 6)

¹ As part of the Troika, the European Commission – in apparent contravention of the requirement to maintain neutrality with regard to property ownership stipulated in the Treaties (Chapter 3) – called for the privatisation of Portugal's state utility provider *Aguas de Portugal*, as well as the large waterworks in Athens and Thessaloniki (CEO, 2011).

2 WATER SUPPLY AND SANITATION AS A PUBLIC RESPONSIBILITY

The provision of infrastructure services (e.g. mobility, supply and disposal, education, welfare services, culture) is organised differently in the various European Union countries. The actual structure of infrastructure policies depends on factors including the legal, economic and political framework in the country concerned (see also Chapter 3). In this chapter, we will focus primarily on economic concepts and the reasons for market or state involvement in the water supply and sanitation industry. We will then go on to discuss the institutional options available for organising water supply and sanitation systems.

2.1 Reasons for state infrastructure policies in relation to water

For state interventions, i.e. action taken by the state,² a range of financial justifications are considered in general terms to demonstrate that individual decisions have caused a range of inefficiencies (“market failures”) which can be corrected through state action. In this context, market failures are traditionally discussed in connection with the following phenomena: external effects, public goods, lack of competition, lack of and/or incomplete markets; lack of information or information asymmetries; lack of foresight, insecurity and uncertainty; long-term, complex coordination and planning demands; merit goods (e.g. books) / demerit goods (e.g. drugs).

The **presence of market failures** generally means that individual decisions should be supplemented or replaced by collective, often state, action and planning. As such, the presence of market failures can generally be assumed in the field of infrastructure policies, particularly in relation to water as a resource (see studies such as Hanemann, 2005; also the distinctions discussed below).

On the whole, arguments for state intervention on the **basis of efficiency** can be derived from the following explanations: individual decisions (including on markets) lead to an inefficient allocation of existing resources; goods and services demanded by citizens are not provided individually, or are only provided individually to an insufficient (i.e. inefficient) extent. State intervention can increase efficiency in this area in the following ways:

² In this study, the term “state” will be used as a synonym for all public-sector actors. This means that the state is active in planning, operating, regulating and financing infrastructure at various levels (European, national, regional, local/municipal). In this sense, the state makes collective decisions which – at least in principle – are intended to be in the common interest, while decisions made by households and companies aim to satisfy individual needs and interests.

- Goods and services demanded by society (e.g. basic health care and education) are provided as a result of decisions made by the state (i.e. by the public sector)³;
- Planning and a standardised, central supply can reduce transaction costs (e.g. administrative costs);
- Individual lack of foresight can be compensated for by state insurance systems;
- Environmental and social sustainability can be ensured by a legal framework.

One important requirement in relation to increasing efficiency is that state intervention itself must be efficient, i.e. that it takes place for the common good, for example, and that potential state failures (e.g. distorting taxation, the political economy in infrastructure policy) are not detrimental to overall efficiency.

In addition to these “traditional” forms of market failure, an important role is also played by **considerations of justice** – as well as basic considerations of public finance and welfare economics. The state should not only function effectively, but should also counterbalance any unequal distribution of wealth perceived as undesirable (e.g. income, wealth, opportunities to participate, regional disparities). Extending beyond this significantly, state action can be justified in the interest of **guaranteeing basic rights and the right to freedom, and ensuring desirable social development (ethics)**.

If state intervention is called for on the basis of these aspects, the state must assume a fundamental **responsibility** for the planning and provision of infrastructure. How exactly this responsibility should be exercised cannot, however, be inferred from this economic justification. As a result, how the role of collective planning and decision making is defined in practice primarily results from the various societal aims (e.g. considerations of justice) in connection with the specific, physical properties of the infrastructure concerned.

Water is distinguished from other goods traded on markets by its **physical and economic properties** (e.g. Young and Haveman, 1985; Kessides, 2004; Lieberherr and Fuenfschilling, 2016). These properties include its mobility, the variation in available water supply, its interconnected uses, the absence of substitutions and economies of scale in the sense of a natural monopoly, which necessitates direct state supply or at least strict regulation in relation to water as a resource. This special role shall be examined in more detail below, paying particular attention to the reasons for and duties of collective action.

Table 1 gives an overview of various areas of responsibility that can generally be exercised by various players (e.g. private households, companies, private organisations, non-profit organisations, the public sector). Distinctions are made between tasks within infrastructure policy according to the provision of services, funding and regulation. Normative justification can be found for the state to take an active role in all three sectors. The economic justifications noted above for state intervention in water management systems are summarised in **Table 1** under the heading “Efficiency”. The aspects of efficiency include public goods, external effects, regulation of competition (natural monopoly), network infrastructure, divestiture and information asymmetries. The importance of these individual aspects for the water management system varies with regard to both water supply and sanitation.

³ For instance, collective pay-as-you-earn systems (for pension schemes, health and accident insurance) are known for having significantly lower administrative costs while providing much higher levels of provision.

State responsibility for...	Normative justifications for state intervention in the water supply and sanitation industry as part of water management systems		
	Justice, social equality	Social cohesion, ethics	Efficiency
Provision of infrastructure services ("provision"), particularly by means of state ownership and operation	In principle, access to infrastructure is guaranteed to all; public-orientated pricing by means of state (municipal) ownership of systems	Collectively established infrastructure, communal use as core element of municipal fulfilment of duties; non-discriminatory access; water has special properties as an economic good (vital nourishment, lack of substitutions)	Clean water (especially drinking water) and environmentally responsible wastewater treatment: public good (protection of public health, soil protection and protection of bodies of water); external effects (avoiding environmental damage); information asymmetries between providers and consumers (users)
Financing and source of funds for providing infrastructure ("financing")	Supporting the development and operation of infrastructure, access by households on lower incomes, infrastructure provision even in regionally peripheral and/or economically disadvantaged areas	Guaranteeing access to vital nourishment; avoiding privatisation of profits (or mutualisation of losses)	Very long service life for infrastructure (natural monopoly); promotion of positive external effects (health, environmental protection); insecurities and uncertainties
Regulating the market mechanism (supplier, demand, access, prices) ("regulation")	Avoiding exploitation of monopoly positions, affordability of water supply and wastewater disposal	Basic human right to clean water (see Sustainable Development Goals – SDGs, etc.)	Provision of drinking water and sanitation: natural monopoly; regulation of price, quality, network; external effects, public goods

Table 1: Provision, financing and regulation of public goods and services: normative analysis of the justifications for state intervention in water management systems

Note: The "strength" of the arguments for state intervention in the water supply and sanitation industry, represented by the darkness of the grey boxes, is based on the economic arguments specified in the text, in conjunction with a judgement by the authors.

Source: Authors' representation and design, partly based on Unger et al. (2017) as well as Young and Haveman (1985).

The assessment of the significance of different arguments is shown by grey shading. Particularly striking are those **efficiency arguments** that focus on technical aspects and aspects of land use within the provision of infrastructure. Regardless of questions of provision, infrastructure in water management systems represents durable networks in the form of natural monopolies connected by strong, external effects (health and environment). Additionally, financing for infrastructure should be secured in the long term; information asymmetries or absence of and/or incorrectly estimated future expectations mean there is a requirement for long-term planning.

Clear arguments in favour of state services can also be seen in relation to the provision of infrastructure; however, these seem less persuasive than those in the area of financing and regulation, as provision itself can take various forms.

In addition to justifying state action based on efficiency, **Table 1** also shows two more aspects which support a clear role for the state in infrastructure policy. Firstly, this is the state's role in **guaranteeing social cohesion and social equilibrium and in ensuring justice, equal opportunities and opportunities to participate**. Even if infrastructure provision would be more efficient through private players, the state would nevertheless have a regulatory role to play, if access to or the price of services (e.g. vital nourishment) were distributed unfairly. The equalising role in the field of providing services results from every individual's basic access to infrastructure, regardless of income or wealth, for example. In the field of financing, there are arguments for supporting fees by granting state subsidies

(societally and regionally) and arguments for the affordability of water supply and sanitation. In the field of regulation, the state role is one of controlling the possibility of a monopoly developing or of the infrastructure provider gaining a market-dominating position. This role also encompasses preventing the exploitation of this market power.

Finally there are additional justifications for state action not solely in relation to efficiency and justice (social equilibrium) but also in relation to **questions of basic ethical values as part of desirable societal development**. Water as a good, as briefly discussed above, is associated with a range of specific physical and economic properties. In relation to basic ethical and societal values, water has the unique properties of being vital for life in providing nutrition and of lacking any substitutes among other goods, both of which can be regarded as particularly important for state guarantees of provision. Illustrating this, a supply of clean water was recognised as a human right by the United Nations in 2010. With regard to providing the infrastructure service (“provision”) as well as financing, some arguments for state interventions can be derived from this viewpoint. However, guaranteed supply can also occur if the state is more active in the field of regulation. From a societal and ethical perspective some arguments do indeed favour state provision. However these arguments are often secondary when the aspects of efficiency and social justice are considered, which both already present very robust arguments for state intervention in the water supply and sanitation industry.

The discussion thus far has indicated that water supply and sanitation present fundamentally governmental (collective) issues that do not (and should not) depend on decisions made at an individual level. The following section will discuss which possible institutional options for organising these sectors arise as a result of this, including funding and provision of infrastructure services.

2.2 Institutional options for water supply and sanitation

2.2.1 Regulatory requirements and frameworks

The roles and viewpoints of the various players that regulate, provide and fund water management systems, as discussed above, indicate that the planning and providing role of the state does not necessarily need to be carried out by a specific state-run organisation. In addition to the tasks of a “rule-of-law state” (guaranteeing basic rights, legal security and core market institutions) and of a “productive state” (production and allocation of public goods and services), there are also tasks of an “enabling and guarantor state” (commissioning services, tenders and granting concessions).

Currently, the global distribution of roles between the public and private sector in the water supply industry generally favours public provision of water, now as it did in the past. **Figure 1** shows that across the world, only about 10 % of all water provision for large cities (with more than 1 million inhabitants) is supplied by private providers (a more exact empirical data basis is not possible within the scope of this study). Even “private” supplies generally operate on the basis of a range of state regulatory framework conditions (such as granting concessional or leasing agreements; see below for more information). However, we should not infer from these findings that no further steps towards liberalisation of municipal water supply can be taken in future (e.g. see the discussion of financialisation of Chapter 6).

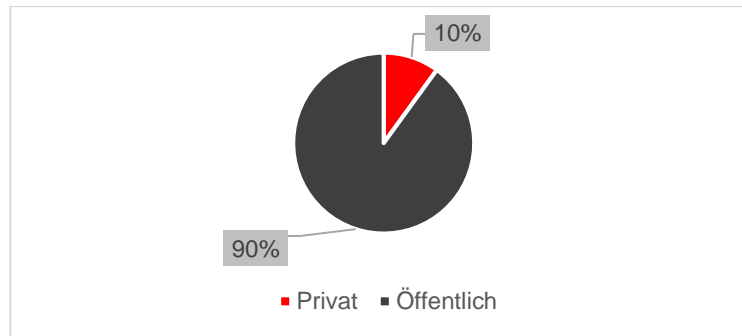


Figure 1: Proportion of public and private supply systems in cities with more than 1 million inhabitants (globally)

Source: Authors' representation based on Massarutto (2016).

A variety of regulatory requirements arise from the discussion up to this point, relating to both public and private provision of water. These become apparent along the supply chain, i.e. from the granting of rights and use of water resources, to performing services in a narrower sense, to the use of water by end consumers (Massarutto, 2016). This also brings out the challenges arising from the specific properties of water as a resource as well as the network infrastructure itself.

As such, it is natural that the economic properties of the water supply and sanitation industry are also relevant for a purely public supply, even though the regulatory requirements are easier to meet, i.e. more efficient and fairer, in public supply systems. For example, the transaction costs of central, state-run planning and provision may be lower overall (see also discussions in section 5.3.2); aspects of governance (e.g. democratic control for sovereign setting of fees vs. control of abuse by regulatory authorities) also play a key role in this. With regard to the organisation of framework conditions, there is also therefore a major economic incentive to influence the regulatory framework, e.g. as part of simplified privatisation or the elimination of price and revenue regulations ("regulatory capture", see Dal Bó 2006; see also Chapter 3).

In addition to this, **Table 2** contains a rough overview of **alternatives for governance in various stylised options** for infrastructure provision in water management systems. What is clear is that any institutional option requires specific governance mechanisms and regulations, while each one is associated with different risks and problems. The central elements of the respective institutional options are derived from possible political influences (e.g. pricing), the supposed efficiency disadvantages of public supply and the various demands on market regulation with regard to information asymmetries, transaction costs and the expected returns for investors.

	<i>Institutional options</i>		
	<i>Public provision and management</i>	<i>Delegated (outsourced, separate) supply</i>	<i>Private supply (monopoly)</i>
Primary instrument of governance	Administrative procedures (bureaucracy, New Public Management)	Contracts	Regulation by independent and discretionary authorities
Sources of competition (incentives, increased efficiency)	Public tendering procedures, internal administrative sources of competition; efficiency incentives for potential outsourcing to private suppliers or privatisation	Tendering and bidding processes, public opinion	Regulation and restriction of price and revenue; yardstick competition; mergers and acquisitions
Significant problems in governance	Political influences, limited incentives for efficiency (static, dynamic)	Incomplete contracts, transaction costs, competitive advantages for companies already on the market	Asymmetrical information, impact on setting standards, quality control (monitoring)
Evaluation and monitoring	Personnel surplus capacity, lack of implementation, cross-subsidies, municipal debt	Vertical integration and transfer prices, re-negotiation, investment and risk distribution, strategic planning	Evaluation/comparison of costs, need for investment, cost rollovers, hidden profits
Risk for (private) investors	Excessive municipal debts, political priorities (e.g. price support)	Contract implementation, lack of post-negotiation options for cost increases	Outflow of free funds (profit distributions), unrealistic efficiency targets, improved information for regulators
Possible mixed forms	Operator contracts, project financing, collective supply (co-operatives)	Leasing agreements, operator contracts, institutional PPPs	Publicly listed corporations, privatisation and financialisation

Table 2: Options for governance and competition as well as model variables of a stylised public, delegated and private infrastructure supply in water management

Source: Authors' representation and expansion based on Massarutto (2016).

With a view to the alleged efficiency disadvantages⁴ of public companies, recent years have seen the results indicators of public companies contrasted with those of private companies with increasing vigour. In this matter, it has become clear that **public companies score at least as well as (and certainly not worse than) private companies** with regard to the usual business figures. In relation to innovation, too, public companies are not lagging behind private companies, contradicting one of the key arguments of public sector economics (i.e. New Public Management) (Florio, 2014; Lieberherr et al., 2016a).

In the water management sector, private provision is therefore primarily hindered on economic grounds, and does not result in cost savings (see e.g. Clifton and Díaz-Fuentes, 2013; Yarrow et al., 2009).

- The **creation of “competition”** is fundamentally difficult in a market which displays the properties of a **natural monopoly**. Even if outsourcing the ownership or provision of services to private

⁴ Levels of efficiency are measured against the central benchmark of cost savings and reduction of prices. As part of this study, the assessment criteria for comparing systems have been broadened significantly. In addition to prices, we give particular consideration to questions of regulation, management and affordability as well as a range of environmental factors. However, as this particular field of infrastructure is planned and operated on a long-term basis, the organisation of framework conditions should be stressed just as much as the question of private investment, especially with regard to financialisation (Chapter 6).

companies is successful, this does not necessarily mean that long-lasting competition has been created as the incumbents – the current holders of provision rights (and responsibilities) – always have the upper hand over new competitors, for instance when concessions are re-tendered. Beyond this, there is a tendency for companies that have won tenders to renegotiate prices retrospectively, or to make additional demands, which can raise the prices again.

- The goals of private companies (profit maximisation) are not necessarily in line with the politically desirable aims of quality, provision and affordability. In cases where private companies have their own separate targets, there is always pressure on quality (cost reduction by lowering quality), resulting from the specific configuration of political leadership and the demand to provide services cost-effectively.
- Public-sector enterprises and/or public provision, can demonstrate a generally higher level of quality by pursuing goals other than solely minimising costs. Interestingly, decision-makers in public companies react to the (perceived) competitive pressure and provide public services more efficiently without lowering the quality.
- **Transaction costs and incomplete contracts** (i.e. the fact that not all possible circumstances can be regulated contractually in the context of rendering complex services over long-term contracts), extensive, necessary tools for controlling and monitoring target achievement and principle-agent problems (information asymmetries in the relationship between a client and contractor) are particularly prominent.

The arguments presented here can also be found in an **extensive study by Bel et al. (2010)** who conducted a **meta-analysis of studies** on the presence and, if applicable, the determinants of price differences between public and private supply systems (especially for the water and waste industry). It is interesting to note that studies conducted recently (particularly since the 1990s) have barely recognised any price difference of this type. There seems to be **no systematic correlation of price differences between public and private provision of municipal water systems**, even if the cost structures of public and private provision are completely different (e.g. the proportion of costs spent on staff is higher in public supply systems). Bel et al. (2010) come to the interesting conclusion in their study that “Many public services are natural monopolies with high asset specificity, as in the case of water distribution, and private production in these cases is unlikely to yield cost savings” (Bel et al., 2010: 573). This summary evaluation is supported by a variety of additional arguments. Firstly, the provision of services by the public sector is becoming increasingly efficient; secondly, the lack of findings showing cost savings as a result of private provision in water management is also emphasised by the fact that studies from the USA indicate a significant cost benefit for public supply and studies from the United Kingdom indicate no cost benefit.⁵

These findings, as well as a number of other studies (including Araral, 2009; Bel and Warner, 2008; Perard, 2009; Beecher, 2016) **clearly contradict** the – sole – outdated OECD source consulted by the **European Commission** as part of the Impact Assessment for the Concessions Directive (Lundsgaard, 2002). This working paper was based on the assumption of savings ranging between 10 and 30 %; however these findings relied primarily on the waste disposal sector and also incorporated different tools (simple tenders). Irrespective of this initial assumption, the European Commission also

⁵ In addition, Bel et al. (2010) show that studies that do not find any significant differences between public and private provision have a significantly lower chance of being published in academic journals. This means that even significant indications of cost savings through private operation should be regarded with caution in light of the frequently small sample size (publications bias).

generalised the conclusions, referring to cost savings resulting from private instruments broadly at the same level (Clifton and Díaz-Fuentes, 2010; Clifton and Díaz-Fuentes, 2013).

2.2.2 Aspects of management

To make the discussion on the systems comparison so far more tangible, the central issues for describing systems are presented in detail below. The elements of organisational and managerial systems are fundamentally based on public economics (e.g. Brede, 2005) and New Public Management (see Kegelmann, 2007). According to EurEau (1997), the various aspects of management – and therefore also of provision and financing – specifically in relation to water management systems, consist of the following considerations, which present the main basic issues for any possible re-orientation of state task completion, now and in the past (see works including Schedler and Proeller, 2009; Pollitt and Bouckaert, 2011) and which are suited to system description of water management. These considerations have also been applied in previous research (e.g. Boschek, 2002):

The **guarantee and regulation of infrastructure** relates to the player (state, company, not-for-profit association) that is generally responsible for ensuring (guaranteeing) the provision of services (fulfilment of duties); also how the provision of infrastructure is generally regulated, whether there is a specific regulatory authority and what decisions this authority can make.

Management of the infrastructure provision can be performed in a variety of ways, i.e. both by specific municipal employees and by companies. In this matter, the question of the level of autonomy is important for management decisions, i.e. what guidelines there are in relation to the operation and economisation of the plants, as well as the distribution of various risks (technical and financial).

The **form of organisation** takes into account the formal type of operation; as such, public companies can also represent an independent, privately organised unit.

Following from this, it becomes apparent which sovereign (e.g. administration) or private (e.g. incorporated company) forms of organisation are used to complete tasks, and the extent to which these forms are implemented, as a result of the **aspect of outsourcing (decentralisation)**; this also shows whether the tasks are completed in a formally private or materially privatised system.

With an eye to ensuring quality and supplying the population, **investments** represent a central aspect of system descriptions. This involves planning systems (for example, cooperating with regional spatial planning), the investment decisions themselves (e.g. the level of autonomy) and financing (sourcing funding from public and/or private sources, sponsorship).

Property relationships and rights of disposal are crucial for the freedom of decisions in relation to the provision of infrastructure; even in cases of outsourcing or privatisation as part of concessions, the possession of the systems often remains (directly or indirectly) under public ownership. Ownership of systems can be permanently and fully private only in cases of complete privatisation or in some PPP (public-private partnership) models.

Pricing can be regulated as a fee by sovereign right (based on legislation), monitored and/or set by regulatory authorities or determined by the company within a specific framework as part of competitive configurations.

Finally, the fundamental question of **management and regulation** in water management systems emerges. For instance, we can ask whether management and regulation thus take place within the scope of administrative action, in the form of regulations by specific authorities or in a market-

like competitive environment. In this matter, we are dealing with the extent of deregulation and decentralisation and the influence and decision-making freedom that private players have.

In order to describe the system, “ideal types” of infrastructure provision were identified by Boschek (2002) in water management, based primarily on these aspects. These ideal types are reproduced in **Figure 2** and they encompass various different aspects (including owner structures, investment planning, regulation, financing, various characteristics of management and assumption of risks, and the term of any contract).

Based on this, the systems of water management can be described for the areas being studied, in an initial overview (see **Figure 3**). From this, it is clear that tasks in the field of water management are completed overwhelmingly by municipal/public bodies in Austria and Germany, now as in the past. Nevertheless, in the larger cities, tasks have been “outsourced” to several companies; beyond urban areas, tasks are generally completed directly by local authorities or community associations. In light of this, it may be possible to refer to an “Austrian” or a “German” system of water management.

Clearly distinguished from this, we can see the “English” and “Welsh” systems. Tasks are completed by private companies that are primarily subject to regulatory price and quality controls. Thus, these systems lie on the other end of the spectrum. As will be shown in more detail below, the system in England can properly be classified as a purely private, regulated system, whereas the Welsh system has been “re-municipalised”. In Wales, the water supply and sanitation system was once privatised; however, for some time now it has taken a form resembling a cooperative, with no shareholders and financial surpluses being reinvested rather than distributed to shareholders.

The system of water management in Hungary has also been changed in recent years. This has seen it move from a privatised and outsourced supply system, established as part of its post-communist transformation, to a municipal supply system run by specific internally outsourced companies. The variation in system elements and their manifestation in the two other countries is significantly larger. In France, local authorities have the option of ensuring completion of tasks both municipally and as part of operator and concession models. These details also apply to Portugal, with certain restrictions. Here, there are mixed systems and the variation in completion of tasks is increased accordingly.

Comparison of European water supply and sanitation systems

	Public operation			Outsourcing		PPP			Complete privatisation	
	Government Department	Public Enterprise (PE)	PE & Corporatized & Commercial	PE & Service Contract	PE & Management Contract	Leasing Contract	Concession Contract	Built Operate Transfer	Private Ownership & Operation	Community Self-help Buyer Integration
Asset Ownership	Pubic	Pubic	Pubic	Pubic	Pubic	Pubic	Pubic	Pubic	Pubic	Privat/Common
Investment Planning	Pubic	Pubic	Pubic	Pubic	Pubic	Pubic	Pubic	Pubic/Private	Pubic/Private	Pubic/Private
Regulation	Parent Ministry, Economic, Quality, Environment Regulators, NGOs					Parent Ministry, Economic, Quality, Environment Regulators, NGOs			Parent Ministry, Economic, Quality, Environment Regulators, NGOs	
Financing Fixed Assets	Pubic	Pubic	Pubic	Pubic	Pubic	Private	Private	Private	Private	Privat/Common
Working Capital	Pubic	Pubic	Pubic	Pubic	Pubic	Private	Private	Private	Private	Privat/Common
Operation & Maintenance	Pubic	Pubic	Pubic	Pubic	Private	Private	Private	Private	Private	Privat/Common
Managerial Authority	Pubic	Pubic	Pubic	Pubic	Private	Private	Private	Private	Private	Privat/Common
Bearer of Commercial Risk	Pubic	Pubic	Pubic	Pubic	Pubic	Private	Private	Private	Private	Private
Basis of Private Compensation	n.a.	n.a.	n.a.	Fixed Fees	Incentive Contract	Incentive Contract	Incentive Contract	Incentive Contract	Incentive Contract	Incentive Contract
Typical Duration	No limit	No limit	No limit	< 5 years	< 5 years	< 15 years	< 30 years	25 - 30 years	No limit	No limit

Figure 2: Aspects and ideal types for describing water management systems

Source: Authors' representation and adaptations from Boschek (2002).

	Public operation			Outsourcing		PPP			Complete privatisation	
	Government Department	Public Enterprise (PE)	PE & Corporatized & Commercial	PE & Service Contract	PE & Management Contract	Leasing Contract	Concession Contract	Built Operate Transfer	Private Ownership & Operation	Community Self-help Buyer Integration
AT										
DE										
ENG/WAL									ENG	WAL
FR										
HU										
PT										

Figure 3: Basic categorisation of the water management systems in Austria, Germany, England and Wales, France, Hungary and Portugal

Source: Authors' representation based on the ideal types and the conclusions drawn from analyses in Chapter 4.

3 POLICIES AND POLITICS IN EUROPEAN WATER POLICY

3.1 Policy processes and regulatory frameworks in the context of the EU

The water supply and sanitation sector is a field which is constantly contributing towards renegotiating the central political issues of Europe's structure. Since the 1960s, a regulatory framework has been unfolding at a European level, and it is exerting increasing influence over the established frameworks at a national level. In addition to directly water-related policies (e.g. the Drinking Water Directive, Water Framework Directive), there is an additional set of more indirectly active policies. At the centre of this are policies in the context of the European competition and internal market policies as well as policies on international trade. In these sectors, central pillars of (re)defining problems, agenda setting and policy formulation are being revisited.

The question of how the focus of European framework conditions has changed for the water sector and what implications this has for the water sector's organisation options shall serve as a backdrop for this chapter. The focus of central policies can be positioned along a continuum between two areas of tension with regard to form and content (cf. **Figure 4**). At one end, the focus is on **questions of the division of competencies in the European "multi-level governance system"**. Efforts towards increasingly complete Europeanisation oppose viewpoints which largely attempt to protect the member states' autonomy (including regions and local councils). At the other end, **various conceptions of a content-related focus for public provision**⁶ come into conflict. Efforts directed at increasingly complete orientation towards the "ideal situation of genuine competition on the internal market" (Krajewski, 2010a: 77) stand in opposition to perspectives seeking to align the security and organisation of supply services according to the principles of prioritising the common good and in consideration of the public interest. In this respect, the legal framework created presents a "historic compromise" (ibid.: 47) between these opposing positions. From the founding documents of the European Community all the way to the current policy templates, both ends of the spectrum are generally represented.

⁶ The range of terms used internationally in the debate about public services (*Daseinsvorsorge*, *service public*, public utilities) points particularly towards the historically varied foundations in legal systems and societal models of the member states (cf. Ambrosius, 2008: 528; Krajewski, 2011: 3ff; Simon, 2009). In addition to these, the EU has also coined the term "Services of general (economic) interest". The term "public services" has been proposed as a multi-jurisdictional term (Krajewski, 2011: 7-8); this term will be taken as a basis throughout the following discussion, in addition to the term "provision of subsistence" (*Daseinsvorsorge*), which is rooted in the debate taking place in German speaking countries.

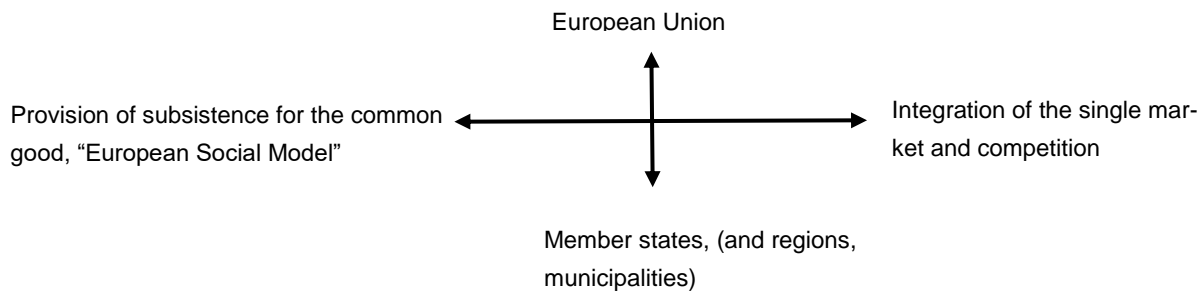


Figure 4: Two dimensions of conflict in the European law of public services

Source: Authors' representation based on Krajewski (2010a); horizontal: content dimension; vertical: competency dimension

Current reorganisation processes in the water sector can be viewed against the backdrop of **political and economic transformation processes since the 1980s** (Bieling/Deckwirth, 2008; cf. Chapter 6). These processes were also introduced along with a paradigm shift with regard to the societal value of public services. From the 1980s onwards, centralised incentives have been implemented at a national level, especially by the conservative governments of the United Kingdom and the USA (Florio, 2013). At the same time, international organisations such as the IMF and the World Bank have also played a role by imposing structural adjustment programmes that were associated with privatisation on developing countries (Raza, 2008; 2014). The **active role of the EU** in reorganising public services should be viewed not least against the backdrop of European **"core projects" (internal market, financial and currency union, financial market integration)** since the 1980s (Deckwirth, 2008a). As part of these reorganisation processes, services that were previously seen as local, geographically rooted activities were gradually conceptualised as internationally tradeable goods, the markets for which therefore had to be created and deregulated (Deckwirth, 2004; Raza, 2008). The increasing significance of deregulation measures in the trade of services can also be explained by the growing importance of the services sector in industrialised countries (Raza, 2014). Particularly since the 2000s, a dynamism has been emerging within the European water sector in the context of Europe's single market and competition policies as well as trade policies (cf. Raza, 2008).

The key points of the discussion presented below are policies in the field of EU internal market policies (Section 3.2) and international trade policies (Section 3.3). Important impetus for the (re)organisation of the water sector stems from these policies. However, particular attention should also be paid to fiscal policy frameworks (see **Figure 5**). As a result, the restriction of leeway on fiscal policy can place significant pressure on reorganising public services within the context of austerity (cf. Hall, 2015b). Nevertheless, the conditions placed on Greece and Portugal by the Troika also contained extremely direct demands for the privatisation of the water supply system (cf. Fischer-Lescano, 2013). There are nonetheless also very particular path dependencies, specific players, discursive configurations and the respective concrete political and economic context, all of which play a crucial role in making decisions about concrete options at a municipal level. Internal market and trade policy can therefore not always be translated linearly into concrete policies at the level of municipal water supplies; however they do increasingly provide a framework within which decisions must be made. The question of what shifts in focus within the study period have taken place at this level and how the various levels of policy interact will be revisited at the end (Section 3.5). The question of the politics associated with the policies that are linked to questions about specific players, their strategies and power relations, and conflicts, will be addressed in a brief excursus (Section 3.4).

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	ff
EU internal market policy																				
EU primary legislation	Lisbon Strategy						Treaty of Lisbon Article 14 TFEU Protocol 26													
EU secondary legislation	Debate about: sector-specific deregulation directive						Services Directive						Procurement law reforms package 2014							
	Water Framework Directive												Concessions Directive		Concessions Directive review					
													Recast of Drinking Water Directive							
Additional documents (preparatory, during the process)	EC Communication Services of General Interest in Europe						EC Internal Market Strategy 2003-2006													
							Green Paper on Services of General Interest													
							White Paper on Services of General Interest													
ECJ rulings	ECJ case Teckal			ECJ case Altmark Trans																
Verankerungen zum Schutz öffentlicher Dienstleistungen	Debate about framework directive for services of general economic interest						Article 14 TFEU Protocol 26 TFEU Article 36 GRC													
International trade policy																				
Free trade agreements	GATS															CETA, TTIP				
													EU-Japan ECJ case Achmea							
Fiscal policy																				
	Convergence criteria												Troika requirements Austerity policies Cap on borrowing		Fiscal Pact ESM European Semester					
Controversies and mobilisations																				
EU internal market	Controversies: Sector-specific deregulation						Controversies: Services Directive						Controversies: Concessions Directive							
International trade policy	Campaigns: Stop GATS												European Citizens' Initiative: Right2Water							
International points of reference	"Cochabamba Water War"												UN-Resolution recognising "water as a human right"							
Trends and phases																				
Trends	Privatisation conflicts			Re-municipalisation →→						Re-privatisation in the context of austerity policies										
Phases	Direct privatisation (1990s)			"Crisis of privatisation", "Strategic retreat"						Parallel developments: → Re-municipalisation, reinforcement of municipal public services → Reorganisation and "shallow expansion"										
	←			←						←										

Figure 5: Overview of central reference points for policies at the level of internal market, trade and fiscal policy, 2010-2018

Source: Authors' representation

3.2 EU internal markets: Policy processes and regulatory frameworks

3.2.1 Evaluation processes for the water sector since the year 2000

While the scope of application for internal market and competition regulations was expanded as early as the 1990s to encompass public services such as telecommunications, postal services and energy supplies, at that point, deregulation of the water sector was not on the agenda at a European level. As part of the **Lisbon Strategy** of 2000, this situation changed. One part of this strategy was to accelerate **internal market integration** and as part of this, to shift the focus onto the role of “Services of general economic interest” in competition and internal market law. In subsequent years, exploration and evaluation processes were initiated in two directions by the European Commission (cf. Schenner, 2006; Raza, 2009).

Firstly, internal market integration was targeted via deregulation of the remaining sectors. As part of this, the relevant sectors were evaluated, including the water sector. In this context, plans were made on a number of occasions for **producing a specific sector directive for deregulating the water sector**. Secondly, exploration processes were initiated to clarify the particular significance of “Services of general economic interest” and to produce increased legal certainty for performing these. There was repeated consideration of a **“framework directive for services of general economic interest”** for this purpose (cf. Schenner, 2006: 90-91).

Neither of these proposed directives was implemented in this form. However, they mark an end state towards which discussions are advancing and from which approaches for future policies have emerged. The results of this exploratory phase can be traced using a range of key documents (communications, reports, speeches). The importance of this for reorienting Europe’s water policies grew particularly in this phase as a result of its significance in the process of topic initiation and agenda setting (for more detailed discussions about the development of processes from 2000 to 2006, cf. Schenner, 2006).

3.2.1.1 Exploration of the water sector in the context of the single market from 2003 to 2006

Starting in 2000, the European Commission addressed the question of how much the water sector can be reintegrated into the process of internal market integration and opened to more competition, through various communications and documents. As such, in 2000, the question of internal market integration was first discussed in a **communication from the European Commission on an “internal market strategy for the services industry”** (European Commission, 2000a). A study commissioned by the Directorate-General for Competition (WRC/ecologic, 2002) has the purpose of “giving an overview of the fundamental characteristics of the water sector” and evaluating the options of how to introduce more competition into this sector (Schenner, 2006: 94). Attention has also been paid to other opinions such as a speech by the former **European Commissioner for Internal Market, Frits Bolkestein**, in which he **emphasised the necessity and feasibility of more competition in the water market, such as through the construction of parallel pipelines** (Bolkestein, 2002; cf. Schenner, 2006: 94).

3.2.1.2 Inter-commission evaluation of water industries

An inter-commission working group (consisting of the Directorate-General (DG) for Competition, DG Internal Markets and DG Environment as well as temporary collaboration with DG Agriculture, DG Regions, DG Business and Finance, DG Enlargement and DG Health and Consumer Protection) has

been commissioned for the purposes of compiling an “inventory of the situation of the European water sector” and reviewing the need for action in possible further legislative initiatives (Schenner, 2006: 107). Additionally, member states are consulted through a survey and the views of other players, such as large water companies and municipal associations, are gained from discussions with these players (ibid.: 108). The results of the inter-commission evaluation include recognition that:

- firstly, competition on the water sector market is not possible in the same way as in other sectors, for practical and technical reasons;
- secondly, extensive deregulation in the water sector is politically controversial and would be difficult to implement;
- thirdly, Europe’s overall competitiveness would not be increased significantly by deregulating the water sector (cf. ibid.: 109).

As a result of these findings, the proposal for a “sector-wide directive for deregulating the water sector”, as has been implemented in other sectors, and with it the idea of a “traditional liberalised market” has been dismissed. At the same time, the aim of **developing competition as far as possible for this overall “financially loaded economic sector”** has not been abandoned (Schenner, 2006: 110). Future approaches are being identified for this in various areas: firstly, in the time limitations of exclusive rights for local monopolies, secondly in reviewing public procurement legislation for outsourcing, thirdly, in a possible distribution of the water market across different segments (such as a differentiation between households and commercial consumers) and fourthly, in increased transparency for conducting procurements and internal management (cf. Schenner, 2006: 111-112; Gee, 2004).

3.2.1.3 The plan for a sector-specific deregulation directive

At the level of policy formulation, the two legislative acts proposed in this exploratory phase were ultimately not implemented – neither a sector-specific deregulation directive for the water sector, nor a “framework directive for services of general economic interest”. In the discussions that followed, however, both options were raised repeatedly as reference points for orientation or delimitation. This exploratory phase gained significance for the processes which followed in two specific respects. Firstly, important steps were taken towards **topic initiation** and **agenda setting**. The water sector, which had not previously been the object of European deregulation efforts, was identified as an area to be reviewed with a view to increasing competition. Although the idea of a sector-specific deregulation directive was rejected, **future approaches for deregulation options** were identified in the accompanying exploration. Another aspect of this phase is that the question of the “particular significance of public services” was also put on the agenda, at least in a declarative form to start with.

In addition, debates concerning a sector-specific deregulation directive have shown that the water sector is a **contested sector, open to politicisation**. Although opinions were not unanimous, the **European Parliament**, speaking in a 2004 resolution on internal market strategies, made a clear statement against water services becoming the “subject to a single market sectoral directive” and emphasised that “since water is a resource shared by all humankind, the **management of water resources should not be subject to the rules of the internal market**.” However, they went on to say that they supported “modernising” the water sector as part of which “economic foundations” would have to “be kept in line with quality and environmental standards as well as the necessary level of efficiency” (European Parliament, 2004; cf. Scherrer et al., 2004: 19). The sceptical views towards deregulation held by the representatives of cities and municipalities, municipal associations, unions, environmental and consumer protection groups and civic players come across even more clearly (cf. Schenner, 2006: 98ff; Municipal Department 27, undated a; Rühle, 2014: 93). The rejection of a sector-specific deregulation directive can therefore be ascribed firstly to the understanding that water is

an “uncooperative commodity” (Bakker, 2003a), i.e. that competition will not function on the market as a result of the “physical and material” properties of the water supply – the fact that water supply is a natural monopoly in which the construction of parallel pipelines is unprofitable and the mixing of water from different sources leads to a reduction in quality (Rühle, 2014: 94). Secondly, the controversies suggest that political legitimacy could not be generated for this type of “sector-specific deregulation approach” (cf. Municipal Department 27, undated a).

3.2.2 The Services Directive

An additional proposition which was targeted towards complete integration of the internal market was the Services Directive, which was also referred to as the “Bolkestein Directive” after the Commissioner for Internal Market at the time (cf. Raza, 2009: 48). This directive was passed on the legal basis of **cross-sector competencies for legislative harmonisation** (Krajewski, 2011: 186) and was designed as a framework directive. In particular, this aimed to create an internal market for public services and to dismantle bureaucratic obstacles with respect to freedom of establishment and freedom of services. A “liberalised market in the sense of deregulating public services” was “expressly not the intention” (Krajewski, 2011: 217).

The **first draft of the 2004 Services Directive** related “**horizontally**” to **all services with the exception of “non-market” activities** (European Commission, 2004b). Provision of water therefore fell within the scope of this as water supply “has been explicitly defined as an ‘economic activity’ since the Green Paper on Services of General Interest” (Schenner, 2006: 104; cf. Wagner, 2005: 149). In controversial discussions on the first draft of the directive, the possible consequences for public services were criticised, among other things (cf. Municipal Department 27, undated a; Krajewski, 2011: 217). In the version passed in 2006 (**2006/123/EC, cf. European Parliament/Europe Council 2006 Directive**) the concerns discussed above were taken into consideration with a focus on sector-specific exceptions (Krajewski, 2011: 217). Firstly, individual sectors were exempted from the general scope of this Directive (Article 2), and secondly, in accordance with Article 17 (1) of the Services Directive, “services of general economic interest” were exempted from the provisions on freedom of service (cf. *ibid*: 218). This exemption also explicitly encompasses “water distribution and supply services and wastewater services”.

Additionally, in Article 1 (3) of the Services Directive, one provision maintained that this Directive would not abolish any existing monopolies and that – in accordance with Community Law – the right of member states to decide which services should be regarded as “services of general economic interest” and how these should be organised shall remain unaltered (cf. Municipal Department 27, undated a).

As public services such as water supply are exempted from the main provisions of the Directive, it could initially be assumed that the practical consequences of the Directive on these sectors would be relatively minimal (Krajewski, 2011: 218). However, a range of issues should nevertheless be considered. Firstly, even if these sectors are excluded from this Directive’s scope of application, the regulations for the freedom of establishment and freedom of services, rooted in primary law, shall continue to apply as before (*ibid.*). Secondly, the entire sector of “adjacent services” such as the construction, upkeep and maintenance of pipeline systems, filter systems and sewage plants as well as billing services (Schenner, 2006: 105) already falls within the remit of the Services Directive regulations. And thirdly, there is an additional aspect which must be noted. The fact that the Services Directive also lists “non-economic services of general interest” in its sector exemptions in accordance with Article 2 can be classed as declarative on the one hand, because non-economic activities “do not fall within the scope of fundamental freedoms anyway” (Krajewski, 2011: 217). On the other hand, however, this list can also be seen as potentially problematic as it “suggests that the European Union has jurisdiction

over regulating non-economic services of general economic interest”, although no such EU jurisdiction has been assigned to the Union within primary legislation (ibid.: 218).

3.2.3 Reorganisation of public procurement law

European Union public procurement law regulates procurement for public contracts, particularly in relation to public procurement of goods, services and construction work (Ringwald et al., 2016: 1). The content of this legislation focuses on ensuring “procurement that is as transparent and non-discriminatory as possible in competition and that follows the principle of profitability” (ibid.: 5). Over the course of several stages of reform, the scope of application for procurement provisions was extended to sectors previously not affected by such regulations. **Overall, public procurement law gained importance** (cf. Klein, 2012: 121) and can now be regarded as a key area of Europe’s internal market, with “significant practical importance to all economic sectors” (Frenz, 2007: VII).

European Union public procurement law is regulated closely by European secondary law, based on the EU’s cross-sector competency to harmonise legislation. The application of secondary public procurement legislation is partly based on order volumes, and only comes into effect above a specific threshold. However, the European Court of Justice (ECJ) also derived some basic requirements below this threshold for procurement contracts in accordance with primary legislation, particularly with regard to the general prohibition of discrimination and respect for basic freedoms (ibid.: 364; Frenz, 2007: 533ff; Heller, 2016).

A public contract as defined by public procurement law generally obtains if a public body commissions a (private or public) legal entity separate from the public body concerned, to provide a service, and pays remuneration for this (Krajewski, 2011: 364). For the water sector, public procurement law only comes into effect “if the services in question are not being provided exclusively and directly by a public authority” (ibid.: 212).

One **special case** is “**public-public collaboration**”, which is common in various sectors of public services and which is generally not required to open up for tenders (cf. General Building Approval, 2017). This is particularly relevant for inter-municipal cooperation and in-house procurement. These exemptions from the obligation to open up for tenders in accordance with public procurement law are, however, subject to strictly defined conditions which have repeatedly been the subject of legal disputes. In particular, the process for in-house procurement has repeatedly been identified as a “legal loophole” and has gradually been **refined and narrowed** further – firstly by the jurisdiction of the European Court of Justice and later by continual secondary measures by the European Commission. Setting the trend in this, there were a number of rulings by the ECJ (“*Teckal*”, “*Stadt Halle*”, “*Parking Brixen*”) which signified a “progressive limitation of the exemption from tenders” for in-house procurement (cf. Frenz, 2007: 705-706). Thus, in one key area for providing public services, the **scope for making decisions** about how contracts can be delegated **was gradually restricted** for public companies.

A secondary regulation for public contract procurement was passed in 1971 and was extended through a number of reforms⁷. In April 2014, previously applicable public procurement legislation was reformed with a new “public procurement package” (European Parliament/European Council, 2014a, 2014b, 2014c). This encompasses three separate directives: both of the reformed procurement and sector directives and the recently passed Concessions Directive. The aims declared for this 2014 public procurement law reform included structuring procedures in a simpler and more flexible way, thus making

⁷ 1971: Council Directive 71/305/EEC, 1992: Council Directive 92/50/EEC, 2004: Directives 2004/17/EC and 2004/18/EC

it easier for small and medium-sized companies to access public contracts and so ensuring that “social and environmental criteria are more carefully considered” (European Parliament, 2017).

The procurement of public contracts in the water sector (such as construction and maintenance contracts) is regulated by a separate sector directive (also known as the Sector Coordination Directive or Utilities Directive, Directive 2014/25/EU). In the water sector, service concessions are also very important. The question of the extent to which these should be regulated by secondary legislation was relevant to the Concessions Directive that was drawn up in 2014 as part of procurement law reforms.

3.2.4 The Concessions Directive

In many member states, “sovereign” duties have been transferred to third parties using service concessions. Generally speaking, the concession holder is granted the right to charge fees and in exchange must assume all financial risk when completing public duties (cf. Rühle, 2014: 90; Krajewski, 2011: 364). As detailed in Chapter 5.3, concessions are characterised by longer contractual terms, more risk, a more complex range of duties and frequent renegotiations (“incomplete contracts”). As a result of the more restrictive provisions for public contracts in public procurement law, the difference between public contracts and service concessions repeatedly became the object of trials held by the European Court of Justice (cf. *ibid.*: 91).

The granting of service concessions is particularly important for industries in which competition on the market is not feasible because of natural monopolies or other structural conditions (Clifton/Díaz-Fuentes, 2013: 142; Herten-Koch, 2013: 248). Concessions holders in the water sector include municipal utilities, municipal administration unions, public-private partnerships (PPPs) and wholly private companies (*ibid.*: 89-90).

Initially, service concessions were not included in detailed secondary public procurement law (cf. Clifton/Díaz-Fuentes, 2013: 140). However, the **granting of service concessions was subject to the demands of the transparency requirement and the anti-discrimination obligation** derived from the EU’s primary law and formulated by the ECJ (cf. German Alliance for the Public Water Sector (AöW), 2014). The aim was for these policies to undergo secondary substantiation through a separate Concessions Directive. Arguments in favour of this included increased transparency, greater legal certainty and the closing of a loophole (cf. Rühle, 2014: 94-95). The legal foundation based on primary law was regarded as too vague and entry barriers stemming from legal uncertainty and a lack of competition were identified as reasons for inefficiency and corruption, and thus as a threat to the provision of services themselves (Clifton/Díaz-Fuentes, 2013: 140).

Since the enactment of the first Public Procurement Directive of 1971, there have been suggestions in every subsequent procurement reform of incorporating service concessions; however, attempts to implement these have always failed (cf. European Parliament, 2010; Rühle, 2014: 91ff; Deinlein, 2014: 27). As part of continued procurement reforms, the European Commission made another attempt in 2010, drawing up a separate Concessions Directive (European Commission 2011b). After initial opposition, this was first met with approval in the European Council and European Parliament, leading to negotiations on this draft in 2013 as part of an informal triologue (Rühle, 2014: 94ff).

While preparations for this draft of the directive initially attracted little public attention, at the end of 2012, a broad coalition opposing the proposed directive’s “extensive attack on structures for water provision” (Deinlein, 2014: 5) emerged. **To put this in perspective, these regulations proposed competitive bidding from across Europe** which meant that bidders from other EU member states would be competing with local bidders (cf. Deinlein, 2014: 24). The deregulation measures for public procurement law were repeatedly referred to as “privatisation” or “**deregulation by the back door**”

(ibid.: 24); although the European Commission is supposed to remain neutral with regard to property ownership, it was implementing measures that would in fact have consequences for property ownership. At the same time, the discussion regarding the Concessions Directive draft was associated with the issues of the **European Citizens' Initiative "Right2Water"** (*"Water and sanitation are a human right! Water is a public good not a commodity!"*) which has been active since 2012. The initiative managed to collect nearly **2 million signatures** in a short time. In 2013, the European Commission's decision to exempt the water sector entirely from the Concessions Directive was finally announced (cf. Rühle, 2014: 101; Deinlein, 2014: 20ff; Municipal Department 27, undated a).

Stadtwerke Karlsruhe

Stadtwerke Karlsruhe supplies the city of Karlsruhe with drinking water, electricity, natural gas and district heating. The drinking water is also used in a number of the surrounding communities. 80 % of the shares of the GmbH (limited company), established in 1997, belong to the city of Karlsruhe and 20 % belong to EnBW AG (Energie Baden-Württemberg AG). As Stadtwerke Karlsruhe is not fully owned by the public sector and as it also functions as a multi-utility company on the deregulated electricity and gas market, a concession for water supply could not be granted directly to this public utilities company without the sector exemption for the water sector, in accordance with the provisions of the directive on granting concessions that was passed (Directive 2014/23/EU).

The significance of the **water sector exemption** for the public water industry can be demonstrated by the effect of the Concessions Directive for those sectors that are not exempted from its scope. For these sectors, the option of directly granting concessions for municipal companies without tenders is subject to carefully worded preconditions. Firstly, there can be "no direct private capital investment", which means that water supply companies that are not 100 % publicly owned will have to tender in order to be granted concessions (Deinlein, 2014: 64). This regulation would affect numerous public water companies in Germany's large cities, for example, as private investment is present in approximately 75 % of companies, according to information provided by the Bundestag (German Federal Parliament) (2013: Answer 4). Secondly, "at least 80 % of the company's total revenue must be generated for the municipality that owns it" (ibid.). As "activities on the deregulated electricity and gas market [...] cannot be classed as generated for the owning municipality" (ibid., cf. Bundestag, 2013: Answer 3), this means that granting concessions to associated companies such as multi-utility services without tendering is effectively impossible.

However, in a "review clause" (Article 53), it was determined that the Concessions Directive should be reviewed in 2019 with regard to the effects of this sector exemption on the water sector. At the time the present study was completed, there was an initial investigation into this review process, commissioned by the European Commission, which discussed "water services in selected member countries" (Blagoeva/Rossing, 2015). The effects on price and quality brought about by the water sector's exemption from the Concessions Directive could not be identified in this study (cf. Chapter 4). The design of the study has been criticised by other sources for only incorporating selected stakeholders and literature; according to critics, newer findings about the transaction costs and particularly the social costs of water deregulation are not considered, and the structure of the question misses the broader social consensus that water and public sanitation are a human right (Lobina, 2018; cf. also Chapter 5.4)

3.2.5 State aid law

European Union state aid law is a central tool for developing the internal market, in addition to public procurement law and the Concessions Directive. Gradually, over recent years, this law has grown in

importance, which is also in line with its “significant economic weight” (cf. Frenz, 2007: VII). The term “state aid” refers to a broad range of state support measures, “encompassing not merely direct financial benefits, but all cost relief that a company must provide in genuine economic processes” (ibid.: 54). Provision of state aid can therefore also occur by adopting laws, regulations and decrees, by concluding contracts, guaranteeing grants and waiving demands, as well as through tax and charge exemptions, supported loans, loan guarantees, provision of goods and services for preferential terms, public-private partnerships, privatisations and investments or legal transactions from public companies (Municipal Department 27, undated b.: 5; Raza/Wedl, 2003: 430).

The topic of “state aid” is particularly important for the **public services sector**, especially when the relevant services are not being carried out directly by a state body, but instead are being **outsourced to a privately or publicly-owned company and the cost of the projects cannot be covered as a result of public service obligations**. In cases like this, financial compensation is important for “counterbalancing the completion of tasks for the common good” (cf. Krajewski, 2007, 2011: 227-228; Simon, 2009: 249ff). The questions of the extent to which state financial compensation actually matches the realities of state aid and in what circumstances it should be permitted lead to further discussions.

As a point of reference, the specifications of state aid became the subject of an ECJ ruling in the case of *Altmark Trans* (ECJ, 2003, case C-280/00, *Altmark Trans*, 24/07/2003). In this ruling, four conditions are mentioned which must all be met for “financial compensation payments [to be categorised] as public service obligations” and not as state aid in accordance with Article 107 (1) of the TFEU (cf. Krajewski, 2011: 465ff; Frenz, 2007: 148ff; Schenner, 2006; Simon, 2009: 255-256).

For many municipal companies, **providing proof of the fourth Altmark Trans criterion** is particularly challenging in practice. It was noted that in the public services industry, this proof is often barely feasible at all in many cases (Austrian Association for Public and Social Economy, 2011 (VÖWG)) and as such, it could lead to an **“effective obligation to open up to tenders”** (Krajewski, 2011: 468). In particular, a “clear preference for competitive tendering” (ibid.) can be read into the Commission’s most recent public procurement package in which it was determined that “[t]he simplest option for authorities to meet the fourth Altmark criterion is [...] to conduct open, transparent and non-discriminatory public tenders” (European Commission, 2012a).

The state aid law was substantiated by the European Commission multiple times at the level of secondary legislation. The “Monti-Kroes Package”, dating from 2005, was replaced in 2011 by the “Almunia Package”. This determines “under which conditions a compensatory payment classed as state aid is compatible with the internal market” (European Commission 2013b) and simultaneously defines the criteria of the *Altmark Trans* ruling in more detail (cf. Wüstneck, 2012).

The importance of governmental compensatory payments for state aid law thus indicates a fundamental “area of tension between the demands of EU law and the funding models for public services”, alongside the “question regarding the legitimacy of cross-subsidisations with regard to competition law” and the sector-specific requirements for universal service obligations (cf. Krajewski, 2011: 442).

The regulations about state aid can be seen as an area in which the margin for organising public services can be restricted via increasingly strict application of competition rules (cf. Schenner, 2006: 84-85; Raza, 2009). Compensatory payments are in principle permitted for public services under certain conditions, but the framework is nevertheless strictly defined and the administrative effort required to prove that the criteria have been met can push public authorities towards calling for tenders from the beginning. Thus, the regulations indicate a certain preference for competitive bidding (Krajewski, 2007: 11).

3.2.6 A look ahead at adjustments to the Drinking Water Directive and the Water Framework Directive

At the internal market level, public procurement law and state aid law in particular played central roles for reorganising the water sector within the period covered by this study. However, changes to the water directives could also bring about change for the organisation of water provision and may lead to “**deregulation by the back door**” (cf. Austrian Technical and Scientific Association on Gas and Water (ÖVGW), 2018d). Recent discussions about recasting a new Drinking Water Directive suggest that measures taken in this context could have significant consequences for the organisational possibilities of water provision on the single market. The following potentially problematic areas can be identified:

- The **increased cost of water investigations** is associated with significant cost increases, particularly for smaller water companies, and these increases could have drastic consequences for the structure of a company (cf. ÖVGW, 2018d; Gramastetten Water Cooperative, undated).
- The **extensive new information and transparency obligations** (with respect to cost structures, consumption, monitoring results, overall performance and investments) make smaller water companies in particular more vulnerable on the market and can thus present a basis for possible future deregulation and privatisation (AöW, 2018a).
- The draft directive does refer back to the European Citizens' Initiative “Right2Water”, but **it ignores the recognition at the UN level of a human right** to water as part of the Drinking Water Directive (cf. EPSU, 2018a; Food & Water European, 2018) and does not take precautions against further deregulation (AöW, 2018a).
- Through a number of delegated acts, important competencies held by the European Parliament, member states and municipalities have been transferred to the European Commission, which has implications for democratic politics (AöW, 2018a, Austrian Chamber for Workers and Employees (AK Österreich), 2018).

Berliner Wasserbetriebe

Berlin's water provider Berliner Wasserbetriebe was partially privatised in 1999, when a share of 49.9 % was transferred to RWE Aqua GmbH and Vivendi (now called Veolia Wasser GmbH). The contract granted the private shareholders guaranteed profits as well as extensive supervisory powers, despite the minority shareholding. Increasing prices, insufficient investment and the publication of the contractual conditions resulted in political controversies which were discussed by the public in the 2011 referendum on the “disclosure of partial privatisation contracts for Berliner Wasserbetriebe”. In 2012, Berliner Wasserbetriebe was re-municipalised by repurchasing. In 2018, the Berlin House of Representatives (Abgeordnetenhaus) passed a resolution declaring the federal state of Berlin a “Blue Community”. In doing so, the members of the chamber assumed certain obligations including actually implementing the human right to water, keeping the water supply as a public good and promoting tap water over bottled water (Berliner Wassertisch, 2018; Berlin House of Representatives, 2018; for more information, see Passadakis, 2006; Hecht, 2015; Beveridge, 2012a; Hüesker, 2011; Härlin/Berlin Wassertisch, 2018).

Key points

- The decision to privatise did not take place primarily based on national or European deregulation requirements. Instead, municipal and political arguments took priority in the context of strained public finances. In addition to restructuring the municipal budget, arguments for a proposed expansion into the international water market were also raised.

- In the process of executing the contract, management consultants played a significant role, accompanied by altered political processes and spheres.
- The undisclosed contractual conditions negotiated with the private companies were structured to the detriment of the federal state of Berlin.
- During the campaign phase of the 2011 referendum, the main focus lay on broader calls for making the water supply more democratic, in addition to the demands for re-municipalisation (cf. Härlin/Berlin Wassertisch, 2018).

3.3 EU trade policy: Policy processes and regulatory frameworks

In addition to Europe's single market, European foreign trade policy represents a field of increasing importance for the organisation of public services, including water supply and sanitation. Within the scope of **multilateral and bilateral free trade and association agreements**, the EU is taking on financial obligations according to international law and relating to the rules on **deregulating the trade of services** (cf. Krajewski, 2011: 117). International trade agreements become vital components of Europe's legal system after coming into effect under international law (cf. Laskowski, 2016: 12). Through this process, they gain priority over existing legal structures in two respects. They **always take precedence over the laws of member states and the EU's secondary law** unless member state or EU law caveats have been explicitly declared (Laskowski, 2016; Deinlein, 2017: 35). This "overriding legal effectiveness" thus affects freedom of action of in less powerful public authorities at municipal, regional and national level when providing public services (Nettesheim, 2016). This **conflicts with the applicable regulations for municipal self-government and subsidiarity** (AöW, 2016: 2). As such, the Water Framework Directive (Directive 2000/60/EC) would have to be designed and applied in conformity with CETA. The precautionary principle applied in the Water Framework Directive for the prevention of water pollution could be interpreted in a liberalised way as a result. Equally, national legislation or governmental measures for protecting public services for the common good – such as regulations for the prevention of water pollution or fee caps for social reasons – could potentially lead to conflicts with investment protection regulations and then to complaints brought to arbitration tribunals (Laskowski, 2016: 3).

Deregulation of public services within foreign trade policy began when the **multilateral WTO agreement GATS** (General Agreement on Trade in Services) came into force in 1995 (cf. Raza, 2008: 279). Since the GATS negotiations came to a standstill in 2005, various bilateral free trade agreements have been made. As regards the EU, particular attention has been paid in recent years to the negotiations on the **bilateral agreements CETA** (Comprehensive Economic and Trade Agreement), **TTIP** (Transatlantic Trade and Investment Partnership) and the Japan-EU Free Trade Agreement **JEFTA** as well as to the **multilateral agreement TiSA** (Trade in Services Agreement).

The basic principles of more recent agreements such as TTIP and CETA build on GATS. However, as they are all aiming for significant, far-reaching deregulation measures, this "new generation" of agreement, can also be referred to as GATS-plus or WTO-plus (cf. Madner, 2016: 223; Raza, 2012: 60; Deinlein, 2017). **CETA is now known as the "blueprint, "testing lab" and "door opener"** for this future generation of agreements (cf. Madner, 2016: 226). In particular, these future agreements involve deregulating trade in services by removing various barriers to market entry identified as "non-tariff" trade barriers (ibid.). In addition, regulations for public procurement, subsidies, competition policy, and regulatory cooperation "as well as general demands regarding domestic regulation" are included (ibid.). Moreover, "investor-state dispute resolution procedures are rooted in the implementation of investment protection standards" (ibid.). They also contain "extensive institutional and procedural guidelines – such as on how administrative procedures should be conducted" and they "aim

towards the use of agreement committees which have the authority to make decisions about the continued development of the agreement”, thus forming a “new form of international public authority” (Nettesheim, 2017). However, a number of drafts for **further planned trade agreements** now extend **beyond CETA** with regard to the **scope of deregulation** specified (e.g. Japan-EU Free Trade Agreement and negotiation mandates with Australia and New Zealand) (cf. Deinlein, 2018; Council of the European Union, 2018a, 2018b).

The creation of new “(mega)regional” agreements between “selected contractual partners at a bilateral and plurilateral level” in recent years can thus be understood in the context of the “deadlocked” WTO negotiations and the difficulty at a multilateral level of implementing “extensive deregulation of trade of services and agreements about the protection of investment and competition” (Madner, 2016: 224; cf. Griller et al., 2017). In future, however, there are plans to later “multi-lateralise” the market liberalisation established initially “by a group of like-minded people” and thus to dock with the WTO system in future.

Fundamentally, free trade agreements are designed in such a way as to deregulate the trade of goods and services and remove trade barriers – **public services are not generally exempted from their scope** (Madner, 2016: 227). In this context, trade barriers can be understood as those measures that are characteristic of and appropriate for the provision of public services for the common good, such as monopolies, exclusive rights or specific obligations when performing services (ibid.: 222).

In this respect, contractual requirements designed to ensure discipline are fundamentally suited to limiting trade options for providing “services necessary for the common good” (Krajewski, 2014: 132) and generating pressure for local decision-makers at two particular levels. Firstly, the scope of decisions is reduced to measures that fall within the disciplinary requirements of the contractually defined framework. The specialist expertise required for these complex legal matters, the expensive inspections and the risk of infringement proceedings can mean that alternative measures are not even considered in advance (**regulatory chill effect**). Secondly, governments become bound to previously agreed deregulation standards through treaties, and retrospective reviews and reforms on the basis of new information or political considerations become difficult (**lock-in effect**) (Krajewski, 2014: 132). Trade agreements of the GATS-plus type contain regulations that also perpetuate previously enacted “deregulation measures at the agreed level for the future” (**standstill effect**) on the one hand, and on the other, they envisage that deregulation introduced independently by the contractual partners after the contract has been concluded can subsequently not be withdrawn (**ratchet effect**)” (Madner, 2016: 222; Fritz, 2015a).

When concluding trade agreements, the basic aims are to increase legal certainty for investments, to “reinforce bilateral trade and investment flows and to contribute towards growth in economically uncertain times” (European Commission, 2016b). At the same time, the European Commission emphasises that CETA does not contain any “obligation to privatise” (ibid.) and that the European Union “does not enter into any obligations concerning public services”, highlighting the safeguarding mechanisms that should ensure “organisational leeway for member states on the matter of public services” (Madner, 2016: 227; cf. European Commission, 2016b; BDI, 2016).

However, the **CETA and TTIP contract negotiations** became **very controversial** in general, just like the negotiations on **GATS 2000**, and as a result of extensive campaigns⁸ they came to be discussed increasingly by the general public. In the following section, we present the key mechanisms for current free trade agreements which could have implications for the structure of public services, particularly the water sector, based on the initial studies of the text of CETA. As CETA is supposed to serve as a

⁸ cf. European Initiative against TTIP and CETA: <https://stop-ttip.org/>; Stop GATS campaign: <https://www.attac.at/kampagnen/archiv/2003-2007/stopp-gats-2002-2004.html>

“blueprint” for standards and to apply to subsequent trade agreements (cf. Madner, 2016: 226), these representations also make it possible to draw conclusions about other agreements.

Arbitration proceedings in the case of Tallinn’s public water company (Tallinna Vesi)

The water supply and sanitation for the city of Tallinn, Estonia, was first transferred to the local authorities in 1991, reformed thoroughly in the following years and converted into a stock company in 1997. In 2001, 51.4 % of the shares for the water company Tallinna Vesi were sold to the international corporation International Water and United Utilities (known as United Utilities since 2005) (Vinnari/Hukka, 2007). Even at the beginning of this period, there were disputes between the city authorities and the water company because of differing interpretations of the contracts as well as the pricing structure. In 2014, United Utilities, a British shareholder registered in the Netherlands,⁹ began proceedings against Estonia before the World Bank’s International Centre for Settlement of Investment Disputes (ICSID), based on the bilateral free trade agreement between Estonia and the Netherlands. The trigger for this was a new law passed in 2010 which allowed the Estonian competition authorities to cap the increase in water tariffs. This would violate the basic principle of “fair and equitable treatment” enshrined in the free trade agreements. Claims were made for compensation of up to 90 million euros for the potential impairment of future profits (Kishimoto, 2015; Steinfert, 2017; for more information about the case of Tallinn, see Vinnari/Hukka, 2007; Hall et al., 2003; Mayr, 2016; and the Investment Policy Hub of the UNCTAD and ICSID of the World Bank).

Key points:

- Internal reorganisation and conversion into a stock company as well as extensive reform as a prerequisite and precursor for subsequent privatisation.
- Expansion of multinational water companies and privatisations in Eastern Europe in the 1990s (cf. Hall/Lobina, 2007).
- Privatisation contracts drawn up unfavourably for the municipality in the early 2000s.
- Investments that were promised but not delivered by the private company (where investments did occur, these were funded by the European Bank for Reconstruction and Development (EBRD)).
- Constant price increases following privatisation.
- Ongoing ISDS proceedings in the water sector within Europe (prominent cases in the water sector previously generally took place outside Europe).
- ISDS proceedings based on a bilateral free trade agreement in connection with the principle of “fair and equitable treatment” (FET) because one state issued regulations that were deemed to threaten profits for the benefit of the public interest.

3.4 Excursus: Politics and the role of specific players in water policies

Policies are formed through the actions of specific players in defined contexts during political processes that can sometimes be confrontational. **Different players** thus represent their own **interests** and advocate for these to be generalised. Against the backdrop of a growing significance for service markets on the one hand and the central societal functions of public services on the other, there are repeated references made to the **metaphor of an uneven playing field** when discussing recent political debates on setting the framework for public services (Raza, 2009: 41). This is in relation to “**structural selectivity**” as well as the role of specific players who have differing power resources

⁹ United Utilities currently holds 35.3 % shares of Tallinna Vesi (cf. Mayr, 2016: 234; <https://tallinnavesi.ee/en/investor/share-value/shareholders/> (02/08/2018)).

and who contribute towards imposing certain preferences more forcefully than others in **areas of tension between configurations aimed towards competition and those based on the common good**. In this matter, there is an alternating relationship between specific players who are capable of positioning themselves assertively, on the one hand, and an institutional environment which is structured to give certain interests and players a larger platform than others, on the other hand. With regard to policies that are orientated towards the expansion of a “globalised services market”, this results in “public interests” repeatedly being negotiated on an unequal footing with regard to the interests of transnational service corporations (cf. Prausmüller/Wagner, 2014b). An in-depth discussion of this situation would require further studies. For this reason, at this point in the study, we will only make a short digression to point out three groups of players, the roles of which have been highlighted multiple times in the context of the discussions outlined above.

3.4.1 On the role of the European Commission

The **European Commission** has repeatedly been referred to as the **driving force** behind the implementation of deregulation agendas, both in the field of Europe’s internal market policies and as a player at the level of international trade policy (cf. Deckwirth, 2008b; Raza, 2008; Bieling/Deckwirth, 2008). Its position in the institutional framework of the European Union also plays a role in this (cf. Raza/Wedl, 2003: 423-424). As such, it has an exclusive right of initiative in the European legislative process and in trade policy issues, and thus has a significant impact on **agenda setting** (cf. Schenner, 2006: 29). As a relatively limited bureaucratic institution, the European Commission is fundamentally reliant on external experts for these matters (Georgi/Kannankulam, 2012: 5-6). In this respect, it is repeatedly made clear that access to knowledge and expertise within agenda setting processes is used selectively.

3.4.1.1 Selective use of information by the European Commission

Thus, attention has been paid to the sparse and **selective use of empirical evidence** for the argumentative justification of the Concessions Directive (Clifton/Díaz-Fuentes, 2013). In one impact assessment prepared by the European Commission on the first draft of the Concession Directive, the importance of competition for competitive tendering was justified using reasons including the significant cost savings it would enable (European Commission, 2011a). However, according to Clifton/Díaz-Fuentes (2013), an analysis of this document shows that this was based selectively on limited and out-dated sources. For example, the cost-saving argument was only justified by a single source (Lundsgaard, 2002), which drew on evidence from the 1990s, a time in which documented experience was only available in individual sectors and countries. More recent sources, which present differentiated analyses after 2000 and less optimistic estimations of cost savings with PPPs based on these analyses, were not, however, consulted for this report (Clifton/Díaz-Fuentes, 2013: 142).

Selective **use of information** was previously demonstrated **in the context of the internal market strategy from 2003 to 2006**. A study commissioned for this purpose by DG Competition (WRC/ecologic, 2002) is said to indicate the positive effects of private sector investment without acknowledging the existing empirical evidence of the problematic effects this can have (Hall, 2003b). With regard to a study commissioned by the European Commission for the purpose of investigating the exemption of the water sector from the **Concessions Directive** (Blagoeva/Rossing, 2015), it was objected that stakeholders and literature were only included selectively and, **crucially, more recent findings about the social costs and transaction costs of water deregulation were not taken into account** (Lobina, 2018; EPSU, 2018b).

3.4.1.2 Selective use of experts by the European Commission:

In this context, the expert groups for the European Commission also play an important role. These groups act as advisory committees, “employed to make recommendations and pass on expert knowledge to the Commission or its agencies” (European Commission, undated). These have the particular purpose of influencing agenda setting as well as legislative intentions and policy formulation at an early stage (cf. Ey/Wagner, 2015: 15). It has been shown that these **expert groups consist of a disproportionate number of representatives of corporations and trade policy interests** as well as entities with conflicts of interests (Vassalos, 2008, 2010; CEO, 2017). For instance, it was determined that in the expert group designated the European Resource Efficiency Platform (EREP) for DG Environment, the company Veolia was represented alongside other corporate representatives but there were no representatives from public water companies (Hall/Lobina, 2012b: 32).

With regard to the access that advocacy groups have to the European Commission, multiple **asymmetries between corporate players and players in civil society** have been identified (cf. Montalbano, 2016). For instance, the European Commission specifically calls upon private players and corporate associations to collaborate with them, which can be referred to as “reverse lobbying” (Fritz, 2015b). Equally, representatives of public interest groups are less able to gain access. It has been discovered that when negotiating the Japan-EU Free Trade Agreement, the European Commission met overwhelmingly with corporate representatives (CEO, 2018).

3.4.1.3 Selective inclusion of corporate players in the context of regulatory cooperation

The chapters in new-generation free trade agreements (e.g. TTIP and CETA) which deal with “regulatory cooperation” are orientated towards “establishing permanent cooperation on regulatory issues” between contractual partners as part of a “living agreement” in order to “increase compatibility with the regulatory systems” (Raza, 2016: 169). This has the particular intention of preventing regulations from restricting trade (Fritz, 2015b: 13). This suggests an asymmetry between different political areas. As the scope of applicability for regulatory cooperation is defined very broadly, a variety of national and European regulatory acts could be included in this and would be subject to trade policy considerations, provided these “have (potentially) significant consequences for bilateral trade and investment activities” (Raza, 2016: 169; Bank et al., 2016: 43). There is also asymmetry with regard to the opportunities for different interest groups to express themselves. In the future, “stakeholders” should play an “institutionally enshrined” role in the process of formulating laws and regulations (Bank/Grotefendt, 2016: 3). However, first of all, institutional capabilities and financial means of exerting political pressure are distributed unevenly between the different interest groups (cf. *ibid*: 2). Secondly, it can be shown that in previous cases of regulatory cooperation on trade policy agendas, it was predominantly trade policy lobbyists who were consulted and not representatives of other societal interest groups (cf. Haar et al., 2016). In this regard, it is clear that these types of early (extra-parliamentary) information and settlement procedures ensure the influence that large lobby organisations have over politics as a “component of the legislative process” and that in the process of this, central **“political decision-making processes, are transferred to anti-democratic expert committees”** (Bank/Grotefendt, 2016: 2).

3.4.2 On the role of proactive corporate strategies

The selective access to experts that the European Commission has is supplemented by corporate players that participate proactively in shaping political processes. At a national level, personal and

institutional connections between industrial and political groups of elites merge in **“political and corporate networks”**, which can be demonstrated for the large **French water companies** in France, for example (Hall/Lobina, 2007: 72). These include former politicians who sit on companies’ executive boards and contribute their institutional expertise and contacts. This phenomenon, which has been referred to as **“revolving doors”**, has also been noted in the reverse direction, for instance when EU institutions are made up of corporate representatives (Lundy, 2017; CEO, undated).

Example of asymmetrical lobbying in the gas industry

One study by the think tank Corporate Europe Observatory investigated the gas industry’s EU lobbying activities on behalf of the gas sector. This study highlights the medium-term consequences of such lobbying activities for the future system of energy markets as well as for the transition options from fossil fuels to renewable energies (Balanyá/Sabido, 2017). Based on data from the EU transparency register, it was discovered that the gas industry’s lobbying expenditure, number of lobbyists and number of actual meetings with the relevant European Commissioners far exceeds those of public interest groups (the latter had just 3 % of the budget, 10 % of the lobbyists and 11 % of the meetings; *ibid.*: 6). Only a small proportion of all lobby organisations and corporations that are active in this field are also voluntarily registered in the EU transparency register so more accurate figures cannot be presented (*ibid.*: 9). At a personal level, it was determined that former employees of European and national institutions are increasingly employed by gas companies (the “revolving door” phenomenon). This presents an additional point of access to institutional and political insider knowledge (*ibid.*: 25).

Additionally, there was repeated direct contact between the companies interested in market access and the municipalities during the preliminary stages of water privatisations (cf. Hall/Lobina, 2007). At the same time, through strategic joint ventures with other companies, it was possible to take the first step in new business areas, or the acquisition of individual areas was used as an entry point to new markets as part of vertical integration. For lobbying activities by interest groups in EU institutions, it is possible to show the extent to which corporate representatives are positioned asymmetrically with respect to representatives of employee interests and players in civil society (cf. Ey/Wagner, 2015; Plehwe, 2012).

3.4.3 International law firms and consultancy firms

Another group of players has also gained increasing importance. Firstly, consultancy firms are playing a growing role in political processes. Taking the example of the privatisation of Berliner Wasserbetriebe, we can see how corporate management consultants played a central role in drawing up contracts (cf. Beveridge, 2012b). Secondly, an increasing number of international consultancy firms and law firms have been established, specialising in fields such as dispute settlement cases between investors and companies (cf. Eberhardt/Olivet, 2014, 2012; Trumbo Vila/Peters, 2016). Even the threat alone of arbitration proceedings by investors and lawyers can have detrimental effects for political regulatory intentions in these conditions (cf. Fuchs, 2018).

3.5 Classification of policies in the water sector between 2000 and 2018

The continued debates around the focus of public procurement and trade policy regulatory measures illustrate “a recurrent dynamic between increasingly far-reaching deregulation projects, their partial reduction following protests and their renewed implementation” (Prausmüller/Wager, 2016: 199,

2014a: 8). With all things considered, we can trace a development which drives increased competition and **“market creation measures”** at various levels, both persistently and **“unidirectionally”** (Prausmüller/Wager, 2016: 199; Clifton, 2014). As a consequence, this leads to a development with which the leeway for member states and municipalities in particular is restricted – **“states are being strait-jacketed”** (Clifton, 2014: 443).

From this perspective, it is possible to trace how policies focused on the market oriented reorganisation of public services are implemented at varying levels. From a broader perspective, these different levels can also be interpreted as “fields of conflict” within which different players negotiate the implementation of their own interests (cf. Prausmüller/Wagner, 2016; Raza, 2009, 2014). For the policy processes in the water sector, it is possible to identify **four central “fields of action”** since the 2000s in which the fundamental standpoints of a “deregulation project” and of a “public services project” have been negotiated: the **internal market, trade policy, fiscal policy and municipal policy**. Parts of these fields were only ever developed or upgraded for the purpose of dealing with public-service issues. In some cases, the strategies within a field have changed but there has sometimes also been strategic **“forum shifting or arena shifting”**. The latter is particularly an option if a field no longer seems to function when asserting specific interests, for instance because an agenda has been politicised extensively by players with other interests in this framework. The developments presented in the previous paragraphs can be classified as follows.

Firstly, in the context of the European **internal market project, a new field of action was initially formed** by increasingly establishing areas of authority over the organisation of the water sector at this level, when they previously fell under the member state’s or municipality’s jurisdiction. However, in the following years, internal shifts also took place within this field of action. Although at the beginning of the 2000s the enactment of a separate Deregulation Directive was still up for debate, the European Commission’s deregulation initiatives were later shifted towards **“lower profile” procedures** and indirect guidelines within public procurement law and state aid law, which are at first **more difficult to access in public debates** because of “their technical nature” (cf. Deckwirth, 2008a: 111). The gradual shifts of focus, which were implemented by ECJ rulings, also played a role in this (e.g. in the context of in-house procurement). The extent to which current planned changes to the more “environmental” water directives (Drinking Water Directive, Water Framework Directive) will affect the organisational form of the water sector remains to be seen. In retrospect, the controversies surrounding previous draft directives can also be interpreted specifically as **“fields of conflict”** within which **different societal roles were allocated and strategies were readjusted**.

Secondly, **international trade policy has gained importance as a field of action** – both quantitatively and qualitatively. As part of “deep integration”, barriers to the cross-border trade in services and to investments are supposed to be dismantled via the **“harmonisation of national regulation”** (Claar/Nölke, 2012: 8). This which engages **“deeply with the internal relationships of contractual states”** (Nettesheim, 2017: 2). Additionally, with regard to the “scope of authority over foreign trade law”, a **“competence creep” by the European Union relative to member states** has been identified (ibid.). This has consequences for democratic procedures as “structural decisions that are made on the basis of EU foreign competence in an international negotiation capacity” are only minimally accessible for parliamentary control (ibid.). Measures are also occasionally implemented at the level of international trade policy which is more inaccessible for democratic processes. These measures appear more difficult to enact at a European or member state level and as such, they are presented as a practical constraint in order to align regulations at a European level (cf. Rühle, 2014: 93). With regard to enacting “deregulation agendas”, the increasing activities of the European Union within the framework of international trade agreements have therefore also been regarded an attempt to circumvent established institutions at other levels (ibid.). On the other hand, at an international level, deregulation measures that have already been enacted at a national or European level are being formalised in

international law by “lock-in” mechanisms so that irreversible and political disputes are removed to different levels for the foreseeable future (cf. Raza, 2008, 2014).

Thirdly, **fiscal policy** is gaining increased importance as a field of action. As such, the implications of the crisis-handling mechanisms following the economic and financial crisis **of 2008 can be regarded as the catalyst for subsequent deregulation processes**. For one thing, this concerns the **constraints placed by the Troika** on the countries most severely affected by the crisis (cf. Chapter 1 on Portugal). Direct privatisation of water companies, which would no longer have been justifiable in other countries at this time in view of the “privatisation crisis” (cf. Candeias et al., 2009; Hall/Lobina, 2006), could be imposed top-down as a prerequisite for bailout packages in this way – although this caused a conflict with the EU’s neutrality, enshrined in primary law, with regard to the system of property ownership in member states. Additionally, disciplinary action relating to fiscal policy plays a growing role in the context of austerity politics. This role has particular consequences for the **decision-making leeway of municipalities with regard to their options of how to organise public services**. Using the example of Berliner Wasserbetriebe, we can see how the budget deficit was not the only crucial factor in justifying privatisation at the end of the 1990s but, in the context of specific discourses, it was certainly important (cf. Beveridge, 2012a).

Fourthly, and following from this, it is possible to identify the **level of municipal policy** as an **increasingly important field of action**. For one thing, austerity guidelines have a particularly marked effect at this level and are – in conjunction with regulatory guidelines and the “chill effect” which extend from regulations at the European and international level – increasingly focused on limiting the political margins for structuring within policies for the common good. For another thing, interested parties that support the enshrinement and implementation of a human right to water in the context of a water supply for the common good are making a stand in an increasingly proactive manner at a municipal level.

At the regulatory level, a “**deregulation project**” has been established **more and more clearly since the 1990s** and has focused on the water sector at the level of European internal market policy and international trade policy since the 2000s. **As a result of difficulties in enacting regulatory initiatives, subsequent regulatory initiatives focused on gradual legal modifications of state aid and public procurement laws within the scope of the internal market**. At the same time, formalisations (lock in) of existing deregulation measures gained importance at the level of trade policy agreements as well as fiscal guidelines. This suggests two simultaneously active processes. The increasing constitutionalisation of deregulation measures at an international level indicates the increased importance of the overall political field. On the other hand, the change to more indirect forms of policy enforcement, through gradual adaptation at the internal market level, suggests increasing politicisation and debate within this sector (Deckwirth, 2010: 46).

The **increasing importance of a regulatory framework suited to liberalisation at a European and international level does not, however, suggest the reverse conclusion that the national or municipal levels have become meaningless as fields of action** or that external requirements should be imposed unilaterally in these levels. Instead, deregulation policies are sometimes decided upon at a national level initially, to be formalised at an international level afterwards (Raza, 2012: 63, 2014: 77). At the same time, for different European cases during the 1990s it is possible to show how decisions to privatise the municipal water supply did not just follow direct European or international guidelines, but were rather taken at a municipal level for a complex set of reasons (cf. Berlin and Tallinn case studies). **Strained public finances, fiscal restriction and austerity policies, an economically liberal administrative line and a focus on location competition were factors on which a “politics of inevitability”** (Beveridge, 2012a) was based. The shifts in fiscal and competitive policies over recent decades have effectively limited the municipal scope for structuring. Even if deregulation is not

openly imposed, regulations concerning procurement laws and trade policies can lead to “chill effects” and prompt municipalities to outsource their water supply, for example, in order to avoid expensive investigation procedures or any claims for compensation in case of complaints. At the same time, both the responsibility for providing public services and the discernibility of any lack of implementation are rooted most prominently in the municipal level. Accordingly, a position aligned towards public services for the common good can be found increasingly at this level.

In contrast, the regulatory **anchoring of a “public services project” for the common good is only evident in its rough outline at a European level** and is reflected in the anchoring of services of general economic interest within the 2007 Lisbon Treaty. At the level of international trade policy, there is no institutional equivalent “for the common good” (cf. Stoll et al., 2015: 3) which results in questions about a “legitimate public interest” in public services being negotiated by the institutions primarily designed for trade policy interests, such as international arbitration courts. Interests focused on public services and water provision organisations for the common good expressed their demands overwhelmingly defensively at the beginning of the 2000s. Firstly, the experiences with actual water privatisation were processed and politicised. Secondly, intervention took place in the “deregulation agendas” within the previously listed fields of action. This occurred primarily at the internal market level over the course of disputes about the draft directives central to the water sector, as well as in the field of trade policy through campaigns against the drafts of bilateral and multilateral trade agreements. Agenda setting in these fields was initially characterised by a “deregulation project” but this could subsequently be subjected to politicisation by actors more focused on the common good. Moving on from the negative experiences with water privatisation in large cities, a trend has been emerging since 2006 which has been referred to more and more explicitly as the **“crisis of privatisation”** (cf. Candeias et al., 2009). This is accompanied by a considerably more proactive expression of interests in support of a water supply system for the common good. This is manifest partly in initiatives which call for the **implementation of a “human right to water”**, as claimed by the **European Citizens’ Initiative “Right2Water”** among others. An increasingly active municipal standpoint can also be traced, advancing re-municipalisation processes and advocating for the anchoring of sustainable public provision of water in the long term.

While in the period since the end of the 1990s the advancement of privatisation and deregulation policies can be considered a dominant trend which was occasionally and increasingly challenged by oppositional standpoints, **two simultaneously active, contradictory trends** can be traced for the **period following approximately 2008**. On the one hand, an increasingly significant **societal consensus in favour of strengthening a public system of water provision** has become apparent, reflected partly in concrete measures such as re-municipalisation or in the resistance to deregulation measures. On the other hand, a development has emerged whereby hardly any actual **privatisations** are implemented directly – with the exception of those privatisations which took place after the financial crisis of 2008 following the Troika’s conditions. After a period of “strategic retreat”, however, a **“shallow expansion”** (Pierce, 2015) can be identified, distributed partially and unevenly in geographical terms. As part of this, large water companies are readjusting their investment strategies and at the same time, reorganisation processes that focus on forms of competition (e.g. in the context of the European public procurement and state aid laws) and **private sector participation** are being **promoted politically** as preferential methods of organising and funding **now as in the past** (cf. Chapter 5.3, see also **Figure 5**).

The **fields of conceptional framing and the production of knowledge** can be identified as two additional fields of action for shaping European water politics. Developments since the 2000s clearly show how **crucial steps** for the conceptional framing of **problem definition** were taken in the early **stages of agenda setting**, some of which received minimal public attention. The redefinition of terms and concepts played a key role in the question of whether water supply should be classified as an

“economic activity” and had implications for the extent to which water was included in the scope of subsequent directives at all. Interpretations and the legitimacy associated with these were also central in the disputes about giving more weight to public services and recognising water as a “human right”. Thus, the level of “concepts” can be regarded as another field of conflict that is used differently. As the analysis of European internal market policy has shown, public services generally, and the water sector in particular, have now become a field which is, in principle at least, widely recognised as being highly important. This is reflected through “symbolic declarations”, such as that water is not a commodity (CETA, Article 1.9), through the emphasis on the particular importance public services have for Europe’s social model, or through specific exemptions for public services. At the same time, it should be noted that **“symbolic declarations” sometimes obscure the “view of reality” and can conceal “essential counteractive regulatory trends or loopholes” in regulations** (Madner et al., 2015: 91).

In connection with this, we can recognise the fundamental contradiction that, **in sets of rules such as free trade agreements, public services** are regarded as “non-tariff trade barriers and thus **exceptions** from the principle of deregulation, which **require justification**” from conception onwards, “although measures for protecting public services have **a defensive character by default**” (ibid.). Some exemptions from purely market-type provision are enshrined in trade agreements and in the public procurement rules for the European internal market and bear specifically on the water sector and generally on public services. However, there is a clear trend according to which tenders are regarded as the norm in competition while exemption regulations for public services are generally suspected of being a “circumvention” (Haslinger, 2013). As such, the **exemption regulations for “public companies”**, such as in-house procurement without calls for tenders, are being **designed with an increasingly purist focus** and now only concern entirely publicly owned companies. This cannot account for the complex organisational forms present in the water sector. Even if, in principle, the trade policy and procurement policy provisions focusing on competition do not obstruct the provision of public services, they do have a direct or indirect impact via chill effects on their organisational forms (cf. Krajewski, 2011: 351).

Over the course of ongoing **Europeanisation and internationalisation of the regulatory framework for public services, the complexity of the fundamental foundation of knowledge** has increased significantly, which has consequences for the organisational options available in policy. Accordingly, we can also identify the structure of the knowledge involved in Europeanisation and internationalisation as an additional field of conflict. The difficulty of an impact assessment for the water sector or public services in general arising from concrete sets of rules thus emerges from the fact that the legal material is complex – first at the internal market level and even more so at the level of international trade policy (cf. Deinlein, 2017: 35). Particularly in international trade agreements, the importance of individual regulations arises from a complex interplay between different parts of the agreement and lots of legal problems only become evident from the finer details (Madner et al., 2015: 91). As such, specialised and expensive expertise and qualified experts are required to assess the impact. This creates barriers to accessibility which benefit certain players and disadvantage others at a structural level. A range of challenges can be identified relating to this. First, there are often “huge translation problems” from the spheres of legal experts to the usual spheres of political conflict – for instance when players at the local level try to conduct a public debate about the potential consequences of international trade agreements. Second, the change in the basis of knowledge goes hand in hand with new players and institutional fixtures coming to the fore, which is demonstrated by the increasing role of international experts, consultants and law firms. Third, inequalities emerge from this between players that are established on different levels – for instance when municipalities meet with the experts and law firms that are active at an international level. Fourth, the seemingly “technical” character of the texts of trade agreements may trick actors into delegating these issues to technical experts instead of negotiating the fundamental political issues touched upon by them in appropriately democratic and

accessible political terms. The shift of political conflict to the field of legally codified agreements can thus also be interpreted as a specific technique for exercising power (cf. Georgi/Kannankulam, 2012: 5).

Fifth and finally, one further aspect of knowledge can be identified as relevant within the context of procurement law calls for bids. By favouring technocratic efficiency criteria in this, the role of comprehensive, yet often less codified industrial and practical knowledge in water supply and sanitation companies is ignored. Using examples such as the re-municipalisation of the Parisian water supply system, it is possible to demonstrate how this knowledge must be built up gradually again (cf. Pigeon, 2012).

4 THE WATER SUPPLY AND SANITATION SYSTEMS IN SELECTED EUROPEAN COUNTRIES

4.1 Method of study: Systems comparison

The aim of this chapter is to present and classify the systems of water management in selected European countries. The term “systems comparison” shall be used below to refer to the description of the water management system in each individual area, the comparison of these using selected evaluative aspects and indicators as well as crucially the assessment of the systems with regards to the dichotomy between public and private provision and the variation of this and mixed forms of this. Thus, the systems comparison shall necessarily be imprecise as the aim of this study is not to describe the water management system in each individual area in detail by means of comprehensive field research, but rather to use the selected standardised indicators to assess the individual country’s systems in comparison.

For this systems description and comparison, there are a number of different classifications and systematisations that have been developed both by international institutes and by research facilities and associations. Within the scope of this study, indicators have been developed for systems description from this range of possible systematisations in order to achieve the aims of the project. The set of indicators we have selected is not suitable for an in-depth individual analysis beyond the aims of this study as it is only possible to get an overview of some aspects or to see these aspects from the perspective of a national average.

Conditions for land use and settlement geography in one country (or one catchment area) provide the primary general framework of the study. Of course, the water resources (spring water, groundwater and surface water), precipitation and other natural conditions (geology, hydrology, vegetation, etc.) available (in a particular catchment area) are crucial for water management systems. The structure of the settlement is also pivotal, as infrastructural efficiency is fundamentally dependent on the forms of settlement, population density and the size of the area receiving services.

The **judicial and regulatory frameworks** are based on the legal (national and European) foundations of water management; in this respect, the regulation of water management systems is becoming increasingly important and thus the specification and monitoring of the extent to which the public interest (e.g. quality, environmental conditions, market and price regulations, etc.) is met is also gaining importance.

The **geographical and technical organisation** describes the current situation of the water management systems in the seven selected countries with regard to the regional structure, supply network and a range of technical parameters.

The **corporate and operational structure** sets out the concrete completion of tasks for providing infrastructure services. Various aspects of management are also described as part of this, such as the significant changes in the conditions for providing services (e.g. privatisation or re-municipalisation).

Financing and cost structure shows the level of costs (and cost elements) and the relative importance of these, as well as financing methods (grants, provisions for cost recovery), provided that this is at all possible within the scope of observations based on averages, and with regard to comparability between countries.

Another group of indicators considers the **prices** (fees) that end-consumers pay for the supply of one cubic metre of drinking water (and for the disposal of the same volume of wastewater). As part of this, special attention is paid to affordability.

A further set of indicators focuses on **quality criteria**. These include identifying not only legal stipulations, but also the level of quality currently achieved (e.g. quality of drinking water, its safety, sanitation technology and purification capacity) as well as various other factors (e.g. network losses). Environmental criteria are also considered as part of this (e.g. protection of waterways, recycled water use, etc.).

Specific **consumer and employee interests** form the final set of indicators. These deal with factors including consumer structure, choice and customer satisfaction.

4.2 Summary of the systems comparison using selected indicators

Over the course of this study, a comprehensive comparison of water supply and sanitation systems in the countries under investigation was compiled. In the section below, we shall present an overview of the key findings. A detailed analysis can be found in the extended version of this study.

The water supply and sanitation systems in the seven countries considered here (Germany, England, Wales, France, Austria, Portugal and Hungary) are fundamentally shaped by their respective conditions for **land use, hydrology** and **settlement geography**. Precipitation levels (which vary at a smaller scale and within the individual countries), the available water, the use of water from springs, ground water and surface water, the structures of settlements, population density and the systems put in place by previous generations (e.g. quality of water pipelines) fundamentally determine the costs and price of water supply and sanitation.

With regard to the structure of settlements, England and Wales have a **population density** that is particularly beneficial for network infrastructure, with approximately 378 inhabitants per km². This is reinforced by the fact that almost 75 % of the population lives in urban areas. Germany also has a relatively high proportion of densely populated areas. In contrast, more than 40 % of the Austrian population lives in sparsely populated rural areas (see **Table 3**). In countries with a relatively low population density (e.g. France or Austria), the **infrastructural efficiency** is somewhat lower as a result.

Category		Austria	Germany	France	England/Wales	Hungary	Portugal
Population density	Population equivalents per km ²	104.6	230.9	105.4	378.7	105.4	111.9
Overwhelmingly urban areas	%	31.9	43.4	35.4	74.7	17.9	46.5
Intermediate regions	%	27.6	40.9	33.6	21.7	63.3	22.3
Overwhelmingly rural areas	%	40.5	15.7	31.1	3.6	18.9	31.2

Table 3: Population density and urban-rural typology according to population distribution

Source: Authors' representation and calculations based on Eurostat (2017e).

Austria has the lowest **water exploitation index** in the comparative study – only around 5 % of the available water is used in the **various industries** such as **public water supply, agriculture, industry and electricity generation (coolant)**. One underlying condition that works to the benefit of the Austrian system is the particularly high level of groundwater and spring water available for public water supply. This is partly made possible because of strict, cost-intensive water protection controls. In Germany, the role of groundwater is also important for public water supply, with approximately 68 % of public water originating from groundwater, while the proportion is lower in England/Wales and Portugal (see **Table 4**). Portugal represents a special case, partly because it has very high gross water abstraction rates per person (high abstraction rates for agriculture) and also because it has relatively low precipitation levels. The strikingly low gross water abstraction rates per person in England/Wales stem primarily from the very low usage rates in the electricity (cooling) and industrial sectors, while the abstraction rates for the public supply of water are actually slightly above the rates for the more populated countries of Germany and France. France has the particular feature of encompassing a great deal of diversity within the country. Essentially, it is important to note that through technological advances, municipal water consumption has stagnated and even decreased slightly in recent years.

Category		Austria	Germany	France	England/Wales	Hungary	Portugal
Water exploitation index ^a	%	5.0	19.0	18.0	9.0	18.0	12.0
Gross water extraction per population equivalent (PE)	m ³ per PE per annum	409	404	460	185	509	1,094
Water abstraction for water supply	million m ³ per annum	685	5,081	5,481	5,777 ^a	605	883
Groundwater	%	100 ^c	68	49	13 ^b	45	21
Surface water	%	0	15	29	68 ^b	42	38
Other source of water	%	0	17	22	19 ^b	13	41

^a DEFRA (2017).

^b Data as recorded for the whole of the United Kingdom

^c This value refers to the level of groundwater and spring water.

Table 4: Water production for public water supply

Source: Authors' representation based on Eurostat (2017h); Eurostat (2017i); European Topic Centre (2016a-f); BDEW (German Association of Energy and Water Industries, 2015); IWA (International Water Association, 2017); EurEau (2009).

With regard to the **geographical and technical organisation** of water management systems, it is worth mentioning that the countries under observation have very high (> 95 %) **connection rates** to water supply systems (see **Table 5**). In contrast, the connection rates to **wastewater disposal systems** show considerable variation. While Austria, Germany and England/Wales have connection rates higher than 95 %, the rates are sometimes significantly lower in the other countries. In some cases, wastewater is treated in **decentralised units** (this is particularly prominent in France and Hungary), in order to save costs on home connection sewers. In light of this, we should also take note of the long **distance the sewage system covers** per person in Austria. This can be ascribed to the low population density and the nature of scattered settlements (see **Table 6**). With regard to water supply, it is important to understand that quality may well be different but on average, it meets the minimum standards for each country. The **condition of the water pipelines** themselves is equally varied; the systems of England, France, Portugal and Hungary have above average **water losses** (network losses). Germany and Austria's water networks only have minimal network losses (**Table 5**).

Category		Austria	Germany	France	England/Wales	Hungary	Portugal
Rate of connection to water supply	%	95.1	99.3	99.0	98.7	99.9	96.9
Total length of water pipeline	thousand km	78.0	550.0	1,050.0	343.5	65.9	108.8
	m per head	8.96	6.69	16.48	5.96	6.70	10.52
Water pipeline losses	%	11.0	7.0	21.9	23.4	24.0	35.0
	m ³ /km/h	0.13	0.12	0.15	0.50	0.26	n/s

Table 5: Technical foundations of water supply

Source: Authors' representation and calculations based on ÖVGW (2018b); Eurostat (2017j); BDEW (2015); BML-FUW (Federal Ministry for Agriculture, Forestry, Environment and Water, 2012a); ERSAR (Portugal Water and Waste Services Regulation Authority, 2015); Kiss and Ungvári (2017).

		Austria	Germany	France	England/Wales	Hungary	Portugal
Total length	thousand km	91.6	561.7	370.0	323.0	47.8	50.4
	m per head	10.5	6.8	5.8	5.6	4.9	4.9

Table 6: Length of sewer systems

Source: Authors' representation and calculations based on BMNT (Federal Ministry for Sustainability and Tourism, 2018); BMLFUW (2012a); BDEW (2015); Kiss and Ungvári (2017); ERSAR (2015).

e ... estimated value

At present, the proportion of wastewater which only ends up in water outlet channels once it has been purified and the **treatment stages** installed for this purpose are still very varied (see **Table 7**). Particularly in Austria and Germany, almost all purification plants have 3 treatment stages. For the most part, the other countries also tend to purify wastewater through 3 treatment stages (with the exception of Portugal) but there are still considerable regional differences and/or the purification of wastewater is in need of significant improvement. Sewage sludge is disposed of appropriately in all countries. In recent years, this has become less of a problem because of the reduction in water consumption and thanks to technological advancements (in purification technology).

Category		Austria	Germany	France	United Kingdom	Hungary	Portugal
1 treatment stage	%	0	0	0.1	0 ^a	0.1	3.6
2 treatment stages	%	1.2	2.5	14.3	43.0 ^a	12.2 ^a	39.4
3 treatment stages	%	93.8	92.9	66.1	57.0 ^a	64.6 ^a	16.4
Total independent (de-centralised) wastewater treatment	%	5.0 ^a	3.2	18	2.0 ^a	14.0	5.0

Table 7: Treatment of municipal wastewater according to treatment stages

Source: Authors' representation and calculations based on Eurostat (2017m; 2017n).

^a estimated value

With regard to the **regulatory and political frameworks** it is worth noting that – as mentioned above – European legal frameworks are implemented in these countries. Indeed, it is possible to see that the European and national regulations have developed from a system for monitoring water ecosystems with a strong focus on hygiene standards into an integrated water policy for catchment areas (water governance). Legislative power itself is regulated from different levels in these countries in terms of jurisdiction, with authority mainly being held at a national level. Nevertheless, Austria, for example, has a national Water Law Act (Wasserrechtsgesetz) but the federal states of Austria (and of Germany) are responsible for legislating on (and implementing) water management systems. Given that European regulations are implemented in individual countries, and there is a duty to report on implementation to the European Commission, data is then collected and processed uniformly on the basis of certain principles.

The **industry structure** of the water management system and private sector involvement vary greatly between the various countries under investigation. At one end of the spectrum, Austria has a supply and disposal structure made up of small-scale organisations at a municipal level (e.g. publicly owned companies in communities or community associations). In this area, England and Wales lie at the other end of the spectrum with their large, centrally operated supply companies. Within France, there is a great deal of regional variation in the structure of the industry with small, municipal companies existing as well as large, national providers (operators). Efforts are currently being made to unify the systems through administrative reforms, not only in France but also in Portugal and Hungary.

In most countries, the ownership structure of water supply is heavily influenced by the public sector, particularly by municipalities (see **Figure 6**). Austria (93 %) and Hungary (97 %), where privatisation has been reversed in recent years, have the highest proportion of organisations entirely under public ownership. Somewhat less significant, but still very high, is the proportion in Portugal (84 %), followed by Germany (60 %), where there is a particularly high number of mixed-economy companies. At the other end of the continuum, we can see France (39 %) and the English and Welsh systems, which are fully privatised. The picture is similar for wastewater disposal systems although in this sector, the overall proportion of entirely public systems is consistently higher. It is worth noting that the case of Wales shows that a “privatised” systems is not necessarily a system focused on maximising profits (it is cooperatively organised instead) or one subject to international investors (Financialisation; see Chapter 6).

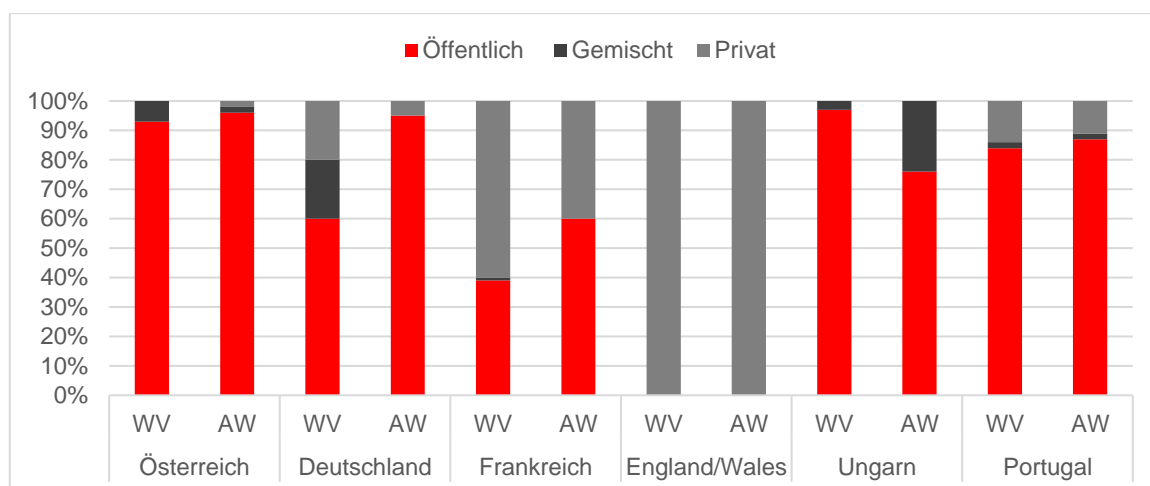


Figure 6: Population supplied according to ownership structure for water supply and sanitation companies (in %)

Source: Authors' representation and calculations based on EurEau (2009); BMGF (Federal Ministry for Health, 2015) for Austria; Sector Overview (2015) for Germany; SISPEA (2017) for France; EurEau (2017); Danube Water Programme (2015b) for Hungary; ERSAR (2016) for Portugal.

There are various key figures for **operational efficiency**. Based on productivity, Austria (180,000 m³ drinking water per employee) is just behind England/Wales in the supply of drinking water, alongside France (190,000 m³) and Germany. For wastewater disposal, Germany has the highest productivity (230,000 m³ of purified wastewater per employee), ahead of England/Wales (210,000 m³) and Austria (190,000 m³). In Portugal and Hungary, both water supply and sanitation show significantly lower productivity. At this point, it is important to stress that productivity is primarily influenced by supply density, which is dependent on features of settlement geography.

An additional indicator for estimating operational efficiency is personnel costs (employees per 1,000 connected inhabitants). In the sanitation sector, France, Germany and Austria have the lowest staffing levels with 0.41, 0.43 and 0.44 employees respectively per 1,000 connected inhabitants. England and Wales follow with 0.49 employees. Hungary in particular, but also Portugal, have significantly above-average rates at 1.09 and 0.86 employees respectively per 1,000 connected inhabitants. In sanitation, Austria has above-average staffing levels and comes in at fourth place behind England/Wales, France and Germany. Here, too, there is a certain correlation between the technology used (e.g. treatment stages), connection rates and population density.

One central concern for European water policies as well as for existing national laws and regulations is the application of the principle of **cost recovery** when providing infrastructure. Taken as a whole, the majority of the countries in this study have a cost recovery rate of nearly 100 % or even more than that (where fees are demanded, this is often legally stipulated – in some cases, other municipal industries are funded by higher income from fees; in the case of private companies, this is a requirement for making profits). Only France and Hungary are unable to achieve the goal of cost recovery, taken as a national average. However, these averages conceal certain differences, in connection with the size of the community/area of provision (e.g. in Austria) or with different legal statuses between companies (e.g. in Portugal).

Investments in water management systems are characterised by differing cycles and particularly by the demands imposed by national and EU regulations. If we compare investments made for inhabitants receiving services during the period of 2000 to 2015, the following picture emerges (see **Table 8**). In the field of water supply, the annual investment per 1,000 inhabitants supplied with services in

England and Wales amounted to EUR 56.22, which was the highest level. Behind that, France (EUR 30.96/1,000 PE), Austria (EUR 30.68/1,000 PE) and Germany (EUR 28.08/1,000 PE) were on a level footing, while Hungary and Portugal had lower levels of investment. In the sanitation industry on the other hand, France (EUR 89.20/1,000 PE) and Austria (EUR 87.58/1,000 PE) were almost equal, significantly ahead of England/Wales (EUR 62.76/1,000 PE), Germany and Hungary. It should be noted that investments made can vary significantly over time, e.g. as a result of short-term renovation requirements or through necessary catch-up processes (better treatment stages in order to meet European standards).

Category	Units	Austria	Germany	France	England/Wales	Hungary	Portugal
Investment per PE supplied – water supply	EUR/1,000 PE	30.68	28.08	30.96	56.22	17.37	19.84
Investment per PE supplied – sanitation	EUR/1,000 PE	87.58	58.44	89.20	62.76	51.00	36.23

Table 8: Comparison of investments in water supply and sanitation (2000-2015, real and adjusted for purchasing power)

Source: Authors' representation and calculations based on BMLFUW (2016b); BDEW (2016, 2017); IFEN (French Institute for Environment, 2007; 2016); Bolognesi (2018); Eurostat (2018a; 2018b); PEAASAR II (Portuguese National Strategic Plan for the Water Supply and Wastewater Collection and Treatment, 2007); PENSAAR2020 (New Strategy for the Water and Sanitation Sector in Portugal, 2015).

Public **subsidies** are guaranteed in all countries included in this study in order to increase the rates of water supply and sanitation or to improve the state of technology for protecting water (see **Table 9**). In terms of water supply, Germany has the lowest annual subsidy per 1,000 inhabitants supplied, by a large margin (with EUR 1.59 per inhabitant), ahead of France (EUR 6.64), Austria (EUR 7.14) and Hungary (EUR 7.93). The highest subsidies per person can be seen in England and Wales (EUR 13.88). For sanitation, on the other hand, Germany also has the lowest subsidies per connected person (EUR 9.11), ahead of Portugal (EUR 14.69) and Austria (EUR 19.83). Here, France and Hungary offer the highest subsidies.

Category	Units	Austria	Germany	France	England/Wales	Hungary	Portugal
Subsidy per person supplied – water supply	EUR/1,000 PE	7.14	1.59	6.64	13.88	7.93	10.57
Subsidy per person supplied – sanitation	EUR/1,000 PE	19.83	9.11	31.78	25.28	35.07	14.69

Table 9: Comparison of subsidies in water supply and sanitation (2000-2015, real and adjusted for purchasing power)

Source: Authors' representation and calculations based on BMLFUW (2016b); BDEW (2016); European Commission (2016c); IFDR (Portuguese Financial Institute for Regional Development, 2013).

Prices and fees are crucial for individual households themselves with regard to ensuring affordability. A comparison of average prices, i.e. the average expenditure of households on water supply and sanitation, based on household water consumption, shows that especially in Austria, France and England and Wales, relatively low prices are paid (see **Table 10** and **Table 11**). Germany has the highest prices, although it has the lowest price increase from this high level (this is also a result of the lowest public subsidies; see above). While regulatory interventions regarding average prices are clearly visible over time in England and Wales as well as Hungary (in the form of a price curb), the price increase can be explained in some countries by an attempt to catch up with others (e.g. better drinking water purification, higher cleanliness level for purification plants, etc.).

Category	Units	Val.	Austria	Germany	France	England/Wales	Hungary	Portugal
Water consumption	l/PE/day		135	121	127	140	94	204
	m ³ /household/year		108	88	102	118	78	186
Total and average expenditure	EUR/household/year		173	231	207	195	75	201
	EUR/m ³	(1)	1.60	2.61	1.74	1.66	0.95	1.08
	EUR/m ³		0.42-2.73	2.03-3.62	1.31-2.97	0.93-2.40	0.42-2.25	0.08-3.09
	EUR/m ³	(1) (3)	1.60	2.69	2.00	1.47	1.70	2.20
	EUR/household/year		188	239	210	197	75	199
	EUR/m ³	(2)	1.73	2.70	1.80	1.68	0.95	1.07
	EUR/m ³		0.46-2.95	2.09-3.74	1.35-3.08	0.94-2.43	0.41-2.22	0.08-3.07
	EUR/m ³	(2) (3)	1.73	2.78	2.03	1.48	1.70	2.19

Table 10: Total and average expenditure and tariffs (fees) for private households purchasing water (EUR, price base, 2016).

BMLFUW (2008; 2012b); ÖVGW (2016); WIFO (Austrian Institute of Economic Research, 2014) for Austria; DESTATIS (Federal Statistical Office of Germany, 2016) for Germany; BMLFUW (2007); BIPE Advisory (2010; 2015); INSEE (French National Institute of Statistics and Economic Studies, 2016); MEEM (French Ministry of Environment, Energy and the Sea, 2016), EEA (2013) for France; Waterwise (2017); OFWAT (Water Services Regulation Authority, 2016); EEA (2013) for England/Wales; KSH (Hungarian Central Statistical Office, 2015; 2016); Papp (2007) for Hungary; ERSAR (2016) for Portugal.

Val.: (1) ... calculated based on 2016 prices, using the particular country's consumer price index (HICP); (2) ... calculated based on 2016 prices, using the particular country's price index for the NACE industry of water supply (HICP441); (3) Standardised average spending or tariffs based on Austria's purchasing power;

Category			Austria	Germany	France	England/Wales	Hungary	Portugal
Total and average expenditure	EUR/household/year		203	280	192	223	92	149
	EUR/m ³	(1)	1.87	3.16	1.88	1.90	1.17	0.80
	EUR/m ³		1.34-5.78	2.28-4.74	0.67-3.32	1.42-2.98	0.15-2.92	0.00-3.62
	EUR/m ³	(1) (3)	1.87	3.25	1.85	1.68	2.09	1.96
	EUR/household/year		208	290	206	235	92	151
	EUR/m ³	(2)	1.92	3.28	2.02	2.00	1.17	0.81
	EUR/m ³		1.36-5.85	2.36-4.91	0.73-3.57	1.50-3.14	0.16-3.16	0.00-3.69
	EUR/m ³	(2) (3)	1.92	3.37	1.99	1.77	2.09	2.00

Table 11: Total and average expenditure and tariffs (fees) for wastewater disposal in private households

Source: Authors' representation and calculations based on the following data sources:

WIFO (2014); ÖWAV (Austrian Water and Waste Trade Association, 2016) for Austria; DESTATIS (2016) for Germany; BIPE Advisory (2015); INSEE (2016); MEEM (2016) for France; OFWAT (2016); EEA (2013) for England/Wales; KSH (2016); Papp (2007) for Hungary; ERSAR (2016) for Portugal.

Val.: see explanations for Table 10 above.

For Austrian pricing, we found relatively moderate to low overall price increases from a generally lower level when compared with other countries (see **Figure 7** and **Figure 8**). Taking all of the systems, Austria comes in second place on average for its water supply (only the water supply system in England and Wales is slightly more affordable) while the prices for sanitation in Austria ranked joint second with those in France. However, municipal provision in Austria is not more expensive, but rather cheaper than mixed or private supplies in Portugal, Hungary (being phased out) and (partially) France. England and Wales on the other hand provide examples of supply systems that are certainly affordable; however the quality of provision for water supply and sanitation is lower. It is interesting to note that (semi) private systems (e.g. England, Wales, Portugal) have experienced the largest price increases over the last two decades. In any event, the traditional public systems for water supply and sanitation offer a stable and affordable option for private households.

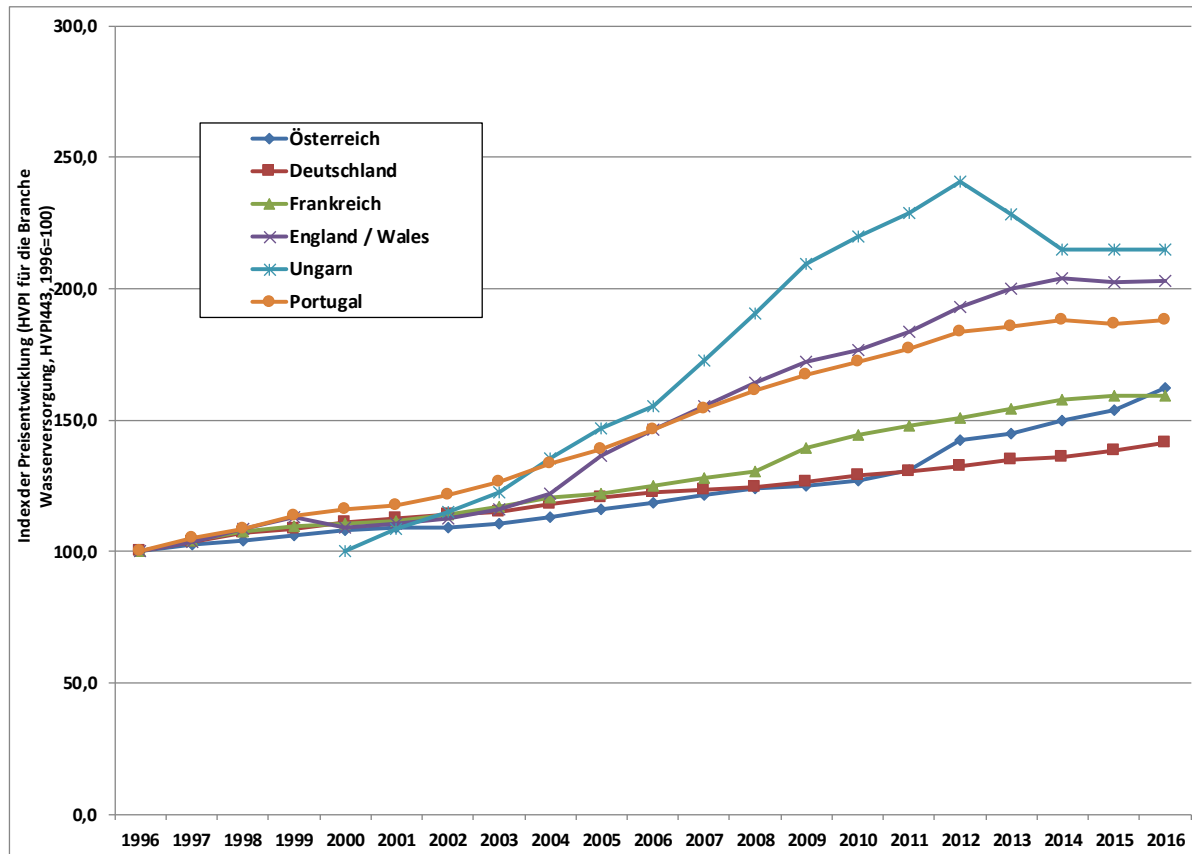


Figure 7: Index of price progression for water supply (1996-2016; 1996=100)

Source: Authors' representation and calculations based on the following data sources:

BMLFUW (2008; 2012b); ÖVGW (2016); WIFO (2014) for Austria; DESTATIS (2016) for Germany; BMLFUW (2007); BIPE Advisory (2010; 2015); INSEE (2016); MEEM (2016); EEA (2013) for France; Waterwise (2017); OF-WAT (2016); EEA (2013) for England/Wales; KSH (2015; 2016); Papp (2007) for Hungary; ERSAR (2016) for Portugal.

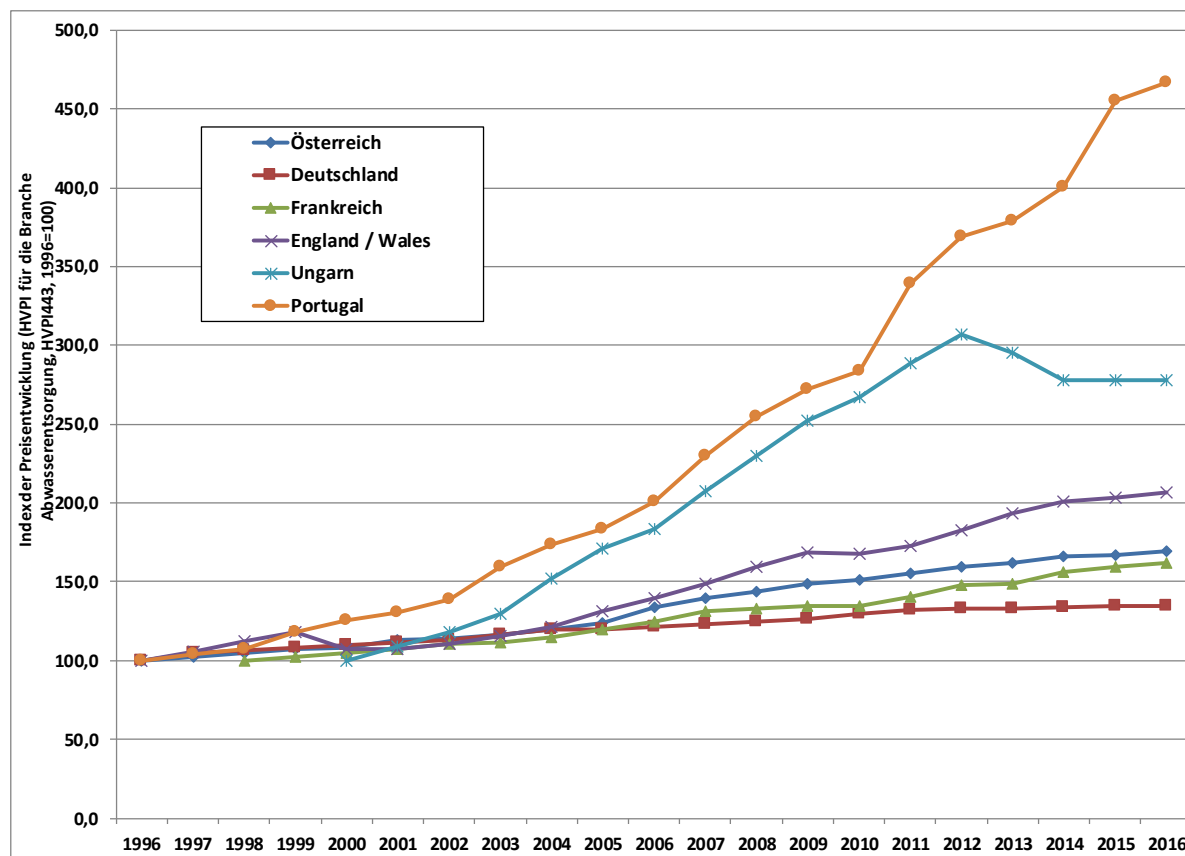


Figure 8: Index of price progression for sanitation (1996-2016; 1996=100)

Source: Authors' representation and calculations based on the following data sources:

WIFO (2014); ÖWAV (Austrian Water and Waste Trade Association, 2016) for Austria; DESTATIS (2016) for Germany; BIPE Advisory (2015); INSEE (2016); MEEM (2016) for France; OFWAT (2016); EEA (2013) for England/Wales; KSH (2016); Papp (2007) for Hungary; ERSAR (2016) for Portugal.

Monitoring the scores for various factors showed very good **drinking water quality** in all of the countries studied (see **Table 12**). At a smaller scale, some individual countries experienced restrictions or bans on use. In 2013, these were imposed in France and Hungary, for instance.

Category		Austria	Germany	France	United Kingdom	Hungary	Portugal
Microbiological factors	%	99.93	99.91	99.83	99.98	99.50	99.68
Chemical factors	%	99.97	99.96	99.82	99.97	99.41	99.92
Indicator factors ¹⁰	%	99.70	99.73	99.53	99.88	97.64	99.34
Pesticides	%	99.96	99.94	99.94	99.60	100.0	100.0

Table 12: Compliance rate of factor figures in groups (2013)

Source: Authors' representation based on the European Topic Centre (2016a-f).

¹⁰ excluding smell, taste, colour and cloudiness

Water protection as one of the **environmental criteria** shows that surface water has very high water quality, particularly in Germany and Austria. This is not observed to the same extent in other countries. Water quality is being improved constantly by EU regulations that stipulate levels of cleanliness (Portugal in particular has made great efforts in this regard).

In terms of protecting natural resources (water resources and network losses), it is clear that Germany and Austria have better than average pipeline networks (proactive management and continuous maintenance), which contributes to efficient use (see **Table 13**); in England and Wales as well as France, significantly higher rates of loss can be identified (also owing to management which is often merely reactive).

Category		Austria	Germany	France	England/Wales	Hungary	Portugal
Water pipeline losses	%	11.0	7.0	21.9	23.4	24.0	35.0
	m ³ /km/h	0.13	0.12	0.15	0.50	0.26	n/s

Table 13: Water pipeline losses in the countries being compared

Source: Authors' representation and calculations based on ÖVGW (2018b); Eurostat (2017j); BDEW (2015); BML-FUW (Federal Ministry for Agriculture, Forestry, Environment and Water, 2012a); ERSAR (Portugal Water and Waste Services Regulation Authority, 2015); Kiss and Ungvári (2017).

The security of supply and disposal is primarily dependent on regional climatic circumstances; even in Austria, there can be small-scale supply shortages as a result of a lack of precipitation. Progressive urbanisation as well as coping with climate change are significant challenges for all countries.

The interests of consumers are regulated accordingly by consumer protection in all countries. Consumer satisfaction itself is high in the countries included in the study (households are satisfied), but in recent years, it has been diminishing particularly in England and Wales, Portugal, France and even Germany.

The interests of employees with regard to the stability of employment developments, as well as of trade union organisations, are protected very differently in these countries. Germany, France and Austria have stable development of employment in water management; in England/Wales, Hungary and Portugal, more jobs than average have been cut, particularly as a result of the financial crisis. Working conditions for some workers have been insecure, particularly in countries where there is significant private involvement of private operators or outsourcing of activities. Of course, explanations for differences in working conditions can also be found in national labour markets and have less to do with the choice of water management system.

5 WATER SUPPLY AND SANITATION BETWEEN DEREGULATION, PPPS AND RE-MUNICIPALISATION

5.1 Origins of modern water supply and sanitation

In terms of network infrastructure, modern water supply and sanitation first emerged in the 19th century in the context of the Industrial Revolution and urbanisation (Juuti and Katko, 2005; Barraqué, 2010). **The beginnings of this new era were marked by private initiatives but they were soon confronted with systemic barriers** (Ambrosius, 1984; Juuti and Katko, 2005; Barraqué and Kraemer, 2014). Telling evidence of these difficulties can be found in the slow expansion rates in France where, after half a century of concessions treaties in towns with a total population of 4.5 million, only around 130,000 people were connected – just 3 % of the population which could be supplied with water (Goubert, 1986). The United Kingdom's experience of expansion followed a similar path (Hassan, 1985).

In light of this, **European municipalities and towns increasingly assumed responsibility for network expansion and operation** and extended the water supply and sanitation system continuously (Juuti and Katko, 2005). One significant driving force of this movement towards municipalisation was the **shift in the status of water from a private commodity to a public good** which should be supplied as quickly and comprehensively as possible, particularly for reasons of public health (Pezon, 2011). Additionally, fire protection and the interests of the emerging industrial class presented another driving force for the expansion of infrastructures in many cities in Europe and North America, pushing towards the development of modern water infrastructures (Hassan, 1985; Tarr and Dupuy, 1988; Hallström, 2002). One key economic factor for the municipalities was the possibility of ensuring access to “cheap” capital for systematic expansion (Barraqué, 2010; Maver, 2000).

In light of this municipalisation, the water supply and sanitation systems for the cities of Europe and the USA were almost all publicly and municipally owned at the beginning of the 20th century (Ambrosius, 1984; Hassan, 1985; Juuti and Katko, 2005; Melosi, 2000; Pezon, 2002; Tarr and Dupuy, 1988; Saraiva et al., 2014). To varying extents and degrees, the cities offered services that had previously been deemed entirely private responsibilities. This “**municipalism**” – sometimes referred to pejoratively as “municipal socialism” by its opponents – encompassed policies that formed the **core of the modern welfare state** (Wollmann, 2014). For opponents, however, the intervention of local government constituted a threat to liberal, capitalist society (Rawson, 2004). The actual characteristics of this political movement depended on institutional frameworks and as a result, the scope of municipal intervention ranged from pure fiscalism to measures that clearly stemmed from socialist theories (Kühl, 2001; Hassan, 1985; Barraqué, 1992; Ambrosius, 1984; Bönker et al., 2016).

The municipal level remained crucial even after the many radical upheavals of both World Wars. This was joined by the central government level with the **expansion of a nation-state focused Keynesian**

welfare state, particularly following the Second World War (Juuti and Katko, 2005; Hall and Lobina, 2016). This assumed responsibility for increasingly important financial functions and supra-regional issues of water and resource management (Lieberherr et al., 2016b; Pezon, 2009; OECD, 2009; Hall and Lobina, 2016). Furthermore, the supra-national entity of the EU also played an important role in providing funding. Most importantly, this took place within the framework of cohesion and structural funds and through the EU's public development bank (European Investment Bank), which benefited the southern European countries of Spain, Greece and Portugal in particular, as well the member states in central and eastern Europe. This historical view emphasises the fact that the expansion of infrastructure, long-term maintenance and universal provision for all citizens took (and takes) place overwhelmingly and almost exclusively through public regional authorities.

5.2 The great deregulation experiment since the 1980s

When **Margaret Thatcher (United Kingdom) and Ronald Reagan (USA) came to power**, this marked the beginning of periods in which **deregulation and privatisation programmes** were initiated, motivated in no small part by ideological rationalisations (see Thatcher, 1993). As was suggested in Chapter 3, this meant that particularly as a result of European integration, the **assertion of the single market principle was and remains orientated fundamentally towards the provision of public services** (Florio, 2013). Generally speaking, this was implemented through the reduction of public cross-subsidies, reinforcement of private ownership and the freedoms associated with this and peripherally through competition policy. The rationale behind this was that it would promote the market principals of individual responsibility, decentralised decision making and information processing and competition in the field of public services. In the EU member states, a supra-national trend has been emerging to this effect since the 1980s, tending towards political enactment of market principals on key areas of public services (Höpner et al., 2011). As a result, private, profit-focused companies became increasingly important, both for providing and for funding and regulating public services (Kunneke and Finger, 2011; Unger et al., 2017).

This was accompanied by **re-regulation in various political spheres**, which did not necessarily result in fewer complex administrative regulations. As a result, new regulatory authorities had to be created, for instance within the scope of privatisations (for merger monitoring, monitoring price and misuse, etc.). This can also be demonstrated empirically in relation to the phenomenon referred to in public administration research as “agencification” – the process of creating autonomous or semi-autonomous agencies to assume public responsibilities (Pollitt and Talbot, 2004; Verhoest et al., 2012). Concrete studies relating to the water sector also point towards this (OECD, 2015a; Jensen and Wu, 2017). Moreover, the proponents of the “regulatory capitalism” theory point out that as part of global market liberalising processes, some national regulations may well be dissolved but additional public, private and hybrid forms will take their place (Levi-Faur, 2005; Braithwaite, 2008). Overall, therefore, an increase in regulation has been assumed since the 1990s, although it was thought that this would take the form of a neo-liberal concept of the state, governance modes and regulatory approaches (Peck and Tickell, 2002). **To put it bluntly, there won't be fewer regulations, just different ones** (Ménard, 2009).

The **water sector** was also **re-configured** as part of this new political paradigm (Bolognesi, 2018). In addition to the economic or ideological motivations for extending market solutions, further key driving forces were posed by the budgetary shortages in the context of Maastricht Treaty regulations in force since the 1990s (Schouten and van Dijk, 2007; Teles, 2015). In conjunction with an increasing need to restore outdated systems as well as more demanding environmental provisions (Hall and Lobina,

2007; Bolognesi, 2018), **investment by private actors** seemed increasingly attractive for the governmental decision-makers, and even politically and legally necessary. However, the economic and political nature of the water sector (see also Chapters 2 and 3) meant that the deregulation agenda was confronted with stronger resistance and the deregulation policies could not be implemented to the same extent as in other areas of public services.

In particular, full, material privatisation, such as in England and Wales, remained an exception and, from a global perspective, was copied by very few other countries (e.g. Chile) (Privatization Barometer, 2017). Instead, political efforts focused on other mechanisms for involving private players in the water sector (Ménard and Peero, 2011). Most importantly, these included formal privatisation (extensive corporatisation) and partial privatisation in the form of mixed-economy companies, increased reliance on outsourcing and the adoption of long-term contracts for financing and providing services, collectively referred to as **“Public-Private Partnerships” (PPPs)**. The latter was particularly favoured as an important competitive component for enforcing the internal market. Drawing on the theory of “contestable markets” (Baumol et al., 1982), the aim was to create competition “for the market” (or for a temporarily guaranteed private monopoly) through tendering. According to this theory, a (temporary) monopoly enterprise would therefore offer prices at a competitive level if other companies could enter the market (possibly in a subsequent procurement process) or the status of monopoly could be lost very rapidly.

Corporatisation, i.e. converting state organisational units into (semi)-autonomous companies (Grossi et al., 2010) can be observed in the water sector, both on a global level (Magdahl, 2012; McDonald, 2016a) and at a European Level (Hall and Lobina, 2014). Nevertheless, concrete institutional forms differ in the extent of their autonomy from the corporatised unit – in a financial, legal and operational sense (Hall et al., 2013). The **trend towards corporatisation** can be seen empirically in all the countries included in the study **to various degrees**.

In addition to corporatisation, **outsourcing** – passing on individual tasks to private players – also presents an additional variation. The cost savings anticipated for the public sector (OECD, 2009) are a key motivation for this, although there is some debate about whether the (alleged) savings may be achieved predominantly by a reduction in the cost of labour – and not as a result of improved organisational models (Hermann and Flecker, 2012; Bowman et al., 2015). Outsourcing can be distinguished from contractual PPPs through a number of factors. In particular, the public sector retains the financing function in the case of outsourcing. Moreover, the various PPP options are also distinguished by significantly longer contractual terms (often between 20 and 30 years). In light of this, outsourcing gives the public sector more control over managing contracts, specifying services and assessing private service providers (Jensen and Stonecash, 2005).

5.3 Public-private partnerships (PPPs)

In essence, **PPPs**¹¹ are defined in economics as **long-term contractual agreements between the public sector and private companies**, with a focus on funding, establishing, operating or using infrastructure as well as sharing the various risks (Mühlenkamp, 2016). The ideal types of PPPs in the water sector are presented schematically in **Table 14**, differentiated with regard to specific aspects. The representation follows the ideal presentation of PPP models but also includes an additional qualification which takes into account the difference between outsourcing and types of PPP mentioned above. For this purpose, short-term service contracts and to a certain extent also management

¹¹ The disciplinary spectrum focused on the PPP phenomenon is very varied (for a comprehensive overview, see Sullivan and Skelcher, 2002 and Bovaird, 2010).

contracts were grouped with the field of outsourcing. As such, the longer term forms that also require moderate to high regulatory effort were assigned to the PPP area.


	<div style="display: flex; justify-content: space-between; align-items: center;"> Outsourcing PPP </div> 					
	Service	Management	Lease	Concession	Operator	Cooperation
Ownership of the systems	public	public	public	public	private/public	private
Investments	public	public	public	private	private	private
Main assumption of risks *	public	public	shared	private	private	private
Operation/maintenance	public/private	private	private	private	private	private
Duration of contract (years)	1-2	3-5	8-15	25-30	20-30	
Regulatory effort	low	low	medium	high	high	medium

Table 14: Overview of ideal PPP models

Source: Authors' representation and expansion based on Budds and McGrahhan (2003) (based on Stottman, 2000).

* According to the theoretical arguments for PPP models, there are various risks (e.g. construction risk, demand risk, risk of insolvency, legal/regulatory risk) that are assigned either to the public or to the private contractual party, in accordance with their ability to bear risk. The extent to which this contractually determined distribution of risks actually takes effect in practice is a matter of controversy.

The easiest step of contractually regulated outsourcing of tasks is drawing up **service contracts** in which only a few simple tasks, such as accounting, assessing water quality or reading meters, are outsourced to private companies. For these services, private companies generally receive a fixed sum of money and the contractual term is short.

Within the scope of **management contracts** (management model), additional tasks are allocated to private companies, particularly the operation and maintenance of systems. Central long-term aspects such as investments and planning remain under public control which means the public sector's control is greater than in more far-reaching models. The private participant is given a proportional share of the profits based on defined targets.

In **leasing contracts**, the private company rents the infrastructure and pays a certain sum of money for this. Similarly to management models, the private party is responsible for operations and maintenance but the commercial risk is shared between the public and private parties to the agreement. Leasing contracts last for a longer period of time during which the private company bears a proportion of the operating costs and receives a share of the income in exchange.

While the models listed up to now are implemented particularly in existing systems, **concession and operator contracts** require private companies to make new investments. In exchange, the companies receive a longer term monopoly over a particular field (20-30 years). Only the systems themselves

remain under public ownership, although these systems are only returned to the public sector after the contractual term has ended in the operator model.

Mixed-economy companies are often included under the heading “cooperation models” in PPP literature. For these, either shares of an existing publicly-owned company can be sold to private companies or a new company is established under private law which is generally held in majority public ownership. Often, the public party hands over operational business to the private shareholder. The European Commission coined the term ‘institutional PPPs’ for mixed-economy companies to distinguish them from those previously denoted as contractual PPPs.

5.3.1 Empirical relevance of PPPs in water supply and sanitation

From a global perspective, **PPPs** have progressed very dynamically in **water supply and sanitation** since the early 1990s. This was motivated particularly by various projects in developing countries, backed by international development banks and national funding bodies. The unconditional faith placed in the efficiency of markets with respect to solving central resourcing problems, including those in the field of public services, even led to the idea of a “(...) dawn of a new utility model (...)” (Kessides, 2004: 35). Around the **mid-2000s**, PPPs in the water sector reached their **peak to date** (World Bank, 2018) with regard to their practical implementation. Since then, the number of PPP projects implemented has dropped by more than half and the capacity (measured by the number of transactions) has fallen from USD 10-14 billion to USD 4-5 billion (Massarutto, 2016). Overall, concession and operator models were predominant in water supply and sanitation at a global level (Ménard, 2013). However, since the mid-2000s, a **trend** has emerged **towards increased assumption of risks by the public sector** (Massarutto, 2016). As a result, 60 projects – representing around 35 % of all investment – had to be terminated ahead of time or ran into financial difficulties. The financial sustainability of most other projects could only be ensured by drastic renegotiations (World Bank and PPIAF (Public Private Infrastructure Advisory Facility), 2013).

From both a global and a European perspective, the **importance of the sector** in comparison to other key areas of infrastructure, especially energy and telecommunications, is **relatively low** (Ménard, 2013). **Figure 9** gives a breakdown of PPPs in the EU according to sector, based on one of the most comprehensive data sources available. It contains 1,184 projects with approximately EUR 270 billion in transactions for the time period between 2000 and 2015. More than half of this – EUR 150 billion – is accounted for by the transport sector (airports, railways, urban rail systems and especially road construction). This is followed by the field of “Welfare and Defence” which encompasses a range of building construction projects for schools, hospitals, prisons, national defence and the police as well as administrative buildings. Overall, the importance of PPPs in the EU has declined since the surge leading up to the economic and financial crisis of 2008/09 (Tomasi, 2016).

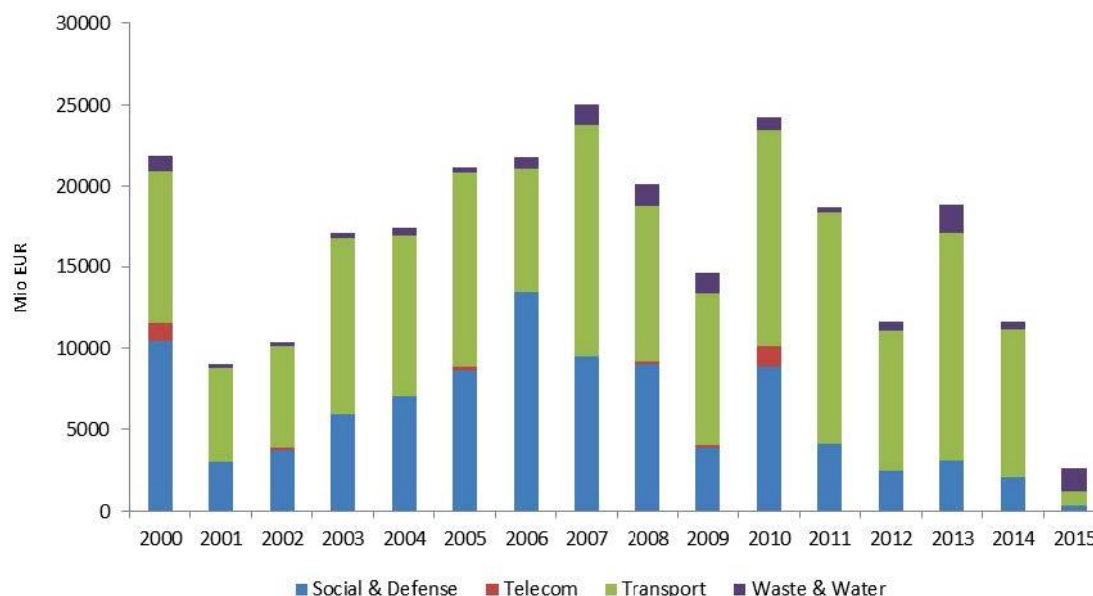


Figure 9: Number of PPPs in the EU for particular sectors (2000-2015)

Source: Tomasi (2016) based on the Dealogic Projectware Database.

The significance of PPPs also varies within the EU member states. By far the largest number of PPPs can be apportioned to the United Kingdom with a value of EUR 120 billion (approximately 45 % of the total value). In absolute terms, this is followed by a group of southern European countries (Spain, Portugal and Italy) as well as France. However, if these absolute values are taken in relation to overall infrastructural investment, this picture changes somewhat. Alongside the United Kingdom, Portugal, Spain and Greece as well as Ireland and Hungary are at the top with a 10-15 % share of PPPs making up the total amount spent on infrastructural investment (Kappeler and Nemoz, 2010; Wagenvoort et al., 2010). In the following sections, we present an overview of the development of PPPs in France, Hungary and Portugal, particularly because these countries are the most relevant out of sample countries studied¹².

5.3.1.1 France

France is the **historical exception** in the water sector with the major role of PPPs within the scope of **“délégation” to private companies**. While in the 19th century, concessions were the dominant form, this changed around the turn of the century as part of the municipalisation movement which also took hold in France (Pezon, 2000). Since then, primarily **leasing contracts (“affermage”)** posing less risk for the private sector have been implemented, for which the public sector makes the investment (Bauby, 2009).

Overall, it appears that the number of contracts “delegated” to private players has been declining rapidly since the beginning of the 2010s (BIPE, 2006; 2012; 2015). Alongside the absolute numbers, the average duration of the contract has also dropped to approximately 10 years (Eaufrance, 2017). Finally, the share of the remuneration that private companies negotiate for themselves when concluding contracts as part of this delegation has decreased on average over the last decade. However,

¹² In the context of the EU, PPP models in the Italian and Spanish sectors are particularly important (Tomasi, 2016).

important differences must be noted here as primarily larger municipalities benefit from this decline (ONEMA (French National Agency for Water and Aquatic Environments), 2013).

Several factors gave rise to these developments. In addition to the increase in inter-municipal cooperation (which means fewer contracts are granted in total to all municipalities), re-municipalisation is particularly responsible for the decline in PPP contracts. The reduction in the duration of contracts and – at least in part – in the remuneration demanded are the key result of **regulatory interventions since the 1990s**. In turn, these were the result of a growing number of legal complaints and protests from municipalities as well as from national associations and local groups of consumers which – often successfully – denounced the excessive prices and corruption (Bauby, 2009; Reynaud, 2010).

Irrespective of these developments, the **level of competition is moderate** – on average, 87 % of cases result in contracts being extended (Eufrance, 2017). An older study determined that almost one third – mainly smaller municipalities – only even get one offer (Reynaud, 2010). In light of this, the return to **public “régie” offers an important alternative** which should influence the behaviour of the three large water companies (see also Chong et al., 2015).

5.3.1.2 Hungary

In the 1990s, Hungary was considered a “Pannonian tiger” and was taken as a model country and a role model for economic and political reforms (Fink, 2006). The radical opening up of the economy using “shock therapy” (Kregel et al. 1993) did not blow over the water sector without leaving its mark. After extensive centralisation under communism, particularly at the end of the 1950s and start of the 1960s (Szabó and Quesada, 2017), extensive decentralisation and privatisation took place following the fall of the Berlin Wall (Horvath, 2016).

After an initial **wave of corporatisation (formal privatisation)** in the first half of the 1990s, privatisation by means of **leasing contracts** was prioritised from the second half of the 1990s (Hegedüs and Papp, 2007; Szabó and Quesada, 2017). For this, foreign investors focused primarily on larger cities and urban agglomerations. On the whole, private companies obtained minority shares (25-49 %) of the respective operational company. In most cases, however, they secured actual control in managing the company (through syndicate contracts) (Hegedüs and Papp, 2007). The unclear legal situation and implementation also meant that some procurement procedures took place without a tendering process.

Since a change in legislation in 2006¹³ there can no longer be private investment in operational supply companies in future, although this does not have a retroactive effect on existing companies (Szabó and Quesada, 2017). As such, many existing contracts will expire in future and will no longer be extended in accordance with the current legal state of affairs.

5.3.1.3 Portugal

In contrast with Hungary, deregulation of the water sector in Portugal has progressed gradually and with a sector-specific focus since the early 1990s. One of the central aims of reform was the incorporation of private companies and investments in light of budgetary shortages (Silvestre and Araújo, 2012; Teles, 2015). From that time, the private sector was able to participate in **mixed-economy** municipal or inter-municipal companies, either in the form of **concessions or as a minority shareholder** (Marques, 2013). The 29 concessions that have been granted since sector deregulation and

¹³ Act CXXI of 2006 on amending various acts founding the budget of the Republic of Hungary for the year 2007, Amendment to Act LVII of 1995 on water management (Szabó and Quesada, 2017: Footnote 8)

that were used to provide services to around 2 million inhabitants in 2016 are crucial in this (see **Table 15**). The duration of these contracts generally lasts between 25 and 30 years.

With a view to the concession holders themselves, it is striking that these originally included both publicly dominated concession holders (“Aquapor” and “Lusáqua”, printed in bold below, were subsidiaries of the state holding AdP at that time) and also private companies (see column “Owner (2008)”). The latter included the French company Veolia, the water subsidiary Aqualia of the Spanish infrastructure company, the Portuguese company AGS (part of the construction group Somague/Sacyr) and the Portuguese company Indaqua which was also owned by the Portuguese construction companies Mota-Engil, Soares da Costa and Hidrante (Orbis, 2018).

This ownership structure has also changed significantly since the onset of the global economic and financial crisis of 2008. Firstly, the subsidiaries of the state-owned company AdP – Aquapor and Lusáqua – were privatised in 2008. Since 2009, the new owners have been DST and ABB. Secondly, Veolia had to divest itself of its water subsidiaries in Portugal during its global group restructuring and it sold these to the Chinese company BEWG (Beijing Enterprises Water Group). There were also changes for Indaqua and for the company AGS, which was originally controlled by Portuguese construction companies. Indaqua has been under the majority control of the Israeli company Miya (and thus ultimately of the investment fund Arison Investments) since 2016 following the sale by the original shareholders (Portuguese construction groups). The remaining shares are owned by the German company Talanx Insurance.

Municipalities	Provision of water	Sanitation	People (thousands)	Company	Year	Duration	Owner (2008)	Owner (2015)
Oliveira de Azeméis	x	x	69	Indagua Oliveira de Azeméis	2014			Indagua (100 %)
Fundão	x	x	29	Aquafundalia	2011			Aquália (100 %)
Cartaxo	x	x	24	Cartágua	2010			Aquália (60 %), Lena Ambiente (40 %)
Azambuja	x	x	22	Águas da Azambuja	2009			Aquapor (74.98 %); Ecobrejo (24.99 %); Others (0.02 %)
Vila do Conde	x	x	80	Indagua Vila do Conde	2008	40	Indagua	Indagua (99 %); Others (1 %)
Elvas	x	x	23	Aquaelvas	2008	30	Aqualia	Aquália (100 %)
Matosinhos	x	x	175	Indagua Matosinhos	2007	25	Indagua	Indagua (99 %); Others (1 %)
Campo Maior	x	x	8	Aquamaior	2007	30	Aqualia	Aquália (100 %)
Abrantes		x	39	Abrantaqua	2007	25	Aqualia/Lena Ambiente	Aquália (60 %), Lena Ambiente (40 %)
Paços de Ferreira	x	x	56	Águas de Paços de Ferreira	2004	35	AGS	Hidurbe (30 %); Somague Ambiente (70 %)
Marco de Canaveses	x	x	53	Águas do Marco	2004	35	AGS	Somague Ambiente (59.2 %); Hidurbe (30 %); Camilo Sousa Mota & Filhos (10.8 %)
Barcelos	x	x	120	Águas de Barcelos	2004	30	AGS	Somague Ambiente (45 %); Hidurbe (30 %); Alexandre Barbosa Borges, SA (25 %)
Alenquer	x	x	43	Águas de Alenquer	2003	30	Aquapor/AGS	Aquapor (40 %); AGS (40 %); Ecobrejo (20 %)
Paredes	x	x	87	Águas de Paredes	2001	35	CGE/Veolia	BEWG (100 %)
Gondomar	x	x	168	Águas de Gondomar	2001	25	Aquapor/Luságua	Aquapor (42.5 %); AGS (42.5 %); CSM (15 %)
Carrizada de Ansiães	x	x	6	Águas de Carrizada	2001	30	AGS	AGS (75 %); SOCOPUL (25 %)
Alcanena	x		14	Luságua Alcanena	2001	15	Aquapor/Luságua	Aquapor (100 %)
Valongo	x	x	94	Águas de Valongo	2000	30	CGE/Veolia	BEWG (100 %)
Cascais	x	x	206	Águas de Cascais	2000	25	Aquapor/AGS	Aquapor (42.96 %); AGS (42.96 %); Oriente (14.08 %)
Santo Tirso e Trofa	x		111	Indagua Santo Tirso/Trofa	1999	35	Indagua	Indagua (100 %)
Santa Maria da Feira	x	x	139	Indagua Feira	1999	35	Indagua	Indagua (99 %); Others (1 %)
Figueira da Foz	x	x	62	Águas da Figueira	1999	25	Aquapor/AGS	Aquapor (50 %); AGS (50 %)
Trancoso	x	x	10	Águas da Teja	1997	25	Aquapor/Luságua	Aquapor (100 %)
Setúbal	x	x	121	Águas do Sado	1997	25	Aquapor/Luságua	Aquapor (60 %); AGS (40 %)
Carregal do Sal, Mortágua, Santa Comba Dão, Tábua e Tondela	x		72	Águas do Planalto	1997	15	Aquapor/Luságua	Aquapor (100 %)
Batalha	x		16	Águas do Lena	1997	15	Aquapor/Luságua	Aquapor (100 %)
Ourém	x		46	Águas de Ourém	1996	25	CGE/Veolia	BEWG (100 %)
Fafe	x		51	Indagua Fafe	1996	25	Indagua	Indagua (100 %)
Mafra	x	x	77	Águas de Mafra	1995	25	CGE/Veolia	BEWG (100 %)

Table 15: Concessions in Portuguese water supply and sanitation (1995-2016)

Source: Authors' representation based on Marques (2013; 2017).

5.3.2 Studies on the effects of PPPs in a systems comparison

In the following sections, we will give an overview of the most important studies on PPPs in water supply and sanitation in France, Hungary and Portugal. In addition to the key results, we will also give a detailed overview of the different explanations of effects and differences offered in the literature.

5.3.2.1 France

Economic studies of France focus primarily on the relation between ownership and/or company status and aspects of price. The overwhelming majority of available studies come to the conclusion that, **with all other factors being equal, prices are higher for PPPs than for public “régie”** (Chong et al., 2006; Carpentier et al., 2006; Boyer and Garcia, 2008; Commissariat General du Development Durable, 2010; Le Lannier and Porcher, 2014; Chong et al., 2015; Porcher, 2017).

Among the possible causes for the higher prices in private provision, there are various explanatory approaches including higher profit expectations and capital costs, as well as lower efficiency in private companies (Hall and Lobina, 2016; Le Lannier and Porcher, 2014). Older studies explain the higher prices in PPPs as stemming from the fact that private companies operate in more difficult frameworks and have higher costs to cover (Carpentier et al., 2006; Boyer and Garcia, 2008).

The most up-to-date and representative study by Chong et al. (2015) shows that prices in private provision are higher and that this difference remains unchanged even if additional influencing factors (e.g. quality of the water, extent of water treatment, source of water, etc.) are taken into account. However, the **price difference is smaller if only larger municipalities are considered**. In connection with this, a second major factor should also be taken into account: while larger municipalities either change provider or revert back to public “régie” in the event of overpriced contracts, this factor does not have an impact on reallocation of contracts in smaller municipalities. These findings are consistent with the studies on the role of transaction costs in tendering procedures for temporary market monopolies (Williamson (1976) and studies based on this).

One well-known problem in the case of PPPs is the issue of **renegotiations** as not all contractual content can be determined in advance (“**incomplete contracts**” problem). Porcher (2012) examines this aspect for all contracts active in 2009 in all French municipalities with a population in excess of 15,000. In this, he finds that for more than 40 % of contracts, at least one renegotiation occurred following the conclusion of the contract. If we take these partial quantities into account, it becomes apparent that these contracts usually have several renegotiations: on average, six renegotiations are conducted per contract or one renegotiation every 2-3 years (ibid.).

5.3.2.2 Hungary

As far as the authors of this study are aware, there are no studies on the Hungarian water supply and sanitation system that make a systematic distinction between private and public providers. Certain aspects can nevertheless be demonstrated on the basis of case studies.

One criticism that is often raised is the insufficient and unilateral **contract design** drawn up during privatisation in the 1990s, which favours foreign investors (Hall, 1998). One aspect referred to by a number of authors (Hall and Lobina, 1999; Szabó and Quesada, 2017) is the fact that in most cases of Hungarian water privatisations, no public calls for tenders were made, and there was therefore no ex-ante competition.

As the literature observes rather critically, this asymmetry becomes apparent partly from the organisation of monitoring and decision-making relationships in private companies and also from the unilateral distribution of risks. In light of the first aspect, it has been noted that although private companies only held minority shares in operational companies, the majority relationships were reversed in monitoring and decision-making committees (Hegedüs and Papp, 2007; Szabó and Quesada, 2017). In terms of the distribution of risks, criticism has been directed at the fact that this was originally targeted unilaterally to the detriment of the public sector (Hall and Lobina, 1999; Lauber, 2006). One notable consequence resulted in conflicts arising within some of the privatised companies (Boda and Scheiring, 2006; Horvath, 2016).

5.3.2.3 Portugal

There are various studies about the differences between public and private provision in Portugal's water supply and sanitation system (see Marques, 2008; Marques and Silva, 2008; Silvestre and Araújo, 2012; Silvestre, 2012; Da Cruz et al., 2012; Silvestre, 2015, among others). In the majority of these studies, it is clear that **publicly-controlled entities**, including administrative entities and municipal companies, have **lower prices than private companies** which is related to their lower organisational costs. Water quality is also better in municipal companies than in the case of private companies which contradicts the New Public Management paradigm.

Although the Portuguese water sector as a whole has been expanded by investments within the PPP framework and the water quality has improved – partly also because of subsequent implementation of strict European legislation 15 years ago – (Silvestre and Araújo, 2012), expectations in connection with PPPs have not been met (Marques, 2005; Silvestre and Araújo, 2012).

The inadequate organisation of concessions contracts offers key explanations for this, from a PPP theoretical standpoint on economics, alongside ineffective legal frameworks, a lack of competition on the water market, and the fragmentation of the sector (Marques, 2005). As in other sectors (particularly motorways), private companies have been offered a **business with no demand risk** (Marques and Silva, 2008). Moreover, there is **no actual competition** in this sector, which is clearly demonstrated by the very low number of suppliers and the poor quality of their tenders in calls for bids. One of the results of the latter was that some calls for bids had to be withdrawn (Marques, 2005). Finally, during the calls for bids, **no public alternative scenario (“public sector comparator”)** was identified to have a corresponding comparative value (Silvestre and Araújo, 2012).

The absence of a public alternative – i.e. the prospect of the community providing services autonomously – indicates another option for understanding the key role of PPPs in Portugal. The possibility of being able to remove the **budgetary restrictions** – at least temporarily – could be at least as important as the official aims of New Public Management (Marques, 2005; Silvestre and Araújo, 2012; Sarmiento and Renneboog, 2015; Teles, 2015). The macroeconomic risks and budgetary consequences of an uncontrolled shadow budget have since been recorded in detail by the International Monetary Fund (IMF, 2014), although this was too late, as the independent assessment of IMF interventions since the early 2000s shows (Eichenbaum et al., 2016).

The **Portuguese Court of Auditors** also expressed **criticism early** on the questionable efficiency and quality benefits of existing PPPs in the water sector (Tribunal de Contas, 2005; 2008). In its latest study on 19 concessions in the water sector (Tribunal de Contas, 2014), it criticised the problematic distribution of risks to the detriment of the public sector. In three out of four cases, municipalities have to pay compensation if water consumption or the number of consumers falls. Furthermore, the Court of Auditors is highly critical of large profits – these can be from 9.5 % to 15.5 % with various concessions (EPSU, 2014).

5.3.2.4 Summary of the effects observed in the systems comparison

The findings from these three countries are largely in line with the international empirical literature in the field of water supply and sanitation systems (e.g. see the recent overview provided by Suárez-Varela et al., 2017).

In accordance with economic theories (of infrastructure), explanations given for France, Hungary and Portugal must be based primarily on a lack of competition and/or difficulties in generating competition in the long term. At the same time, the inadequate institutional framework at a national and local level should not be overlooked. Additionally, it is clear especially in Hungary and Portugal but also in France that the construction of contracts often unilaterally benefits private companies. Drawing up contracts that are more favourable for the **public sector** requires **skills (capacities) and resources** which represent **transaction costs in outsourcing** and as such, have to be offset by the (allegedly) higher efficiency of private partners (see Chapter 2). This problem is particularly harmful for smaller municipalities.

Alongside the official aims of New Public Management, which have undoubtedly prompted privatisation efforts in the water supply and sanitation industry since the 1990s, the public budgetary situation was also a key reason for private company investment (Bel and Miralles, 2003). This is because it was believed that PPPs could alleviate fiscal pressures. Increasing Europeanisation also played an important role in this. The options for traditional public funding were particularly restricted by the Maastricht criteria (see also Schouten and van Dijk, 2007, in general). At the same time, the third phase of EU water legislation (see Chapter 4) made additional investments necessary. In this situation, private capital – in addition to long-term EU credit and EU funding from structure and cohesion funds – provided the financing alternative to modernising water supply and sanitation systems (Teles, 2015).

The examples of Portugal and Hungary emphasise the fact that **PPPs are often a fiscal illusion** or, in the words of the (economically liberal) magazine “The Economist”, an “**accounting gimmick designed to get borrowing off the government’s balance-sheet**” (The Economist, 2018: 8). This is because the fundamental budgetary issues are simply postponed to a later date and, in the case of a stimulating, uncontrolled shadow budget, PPPs can even exacerbate the issues. Over the course of the economic and financial crisis, this resulted in a moratorium on new PPPs in Hungary and Portugal (Eichenbaum et al., 2016), after the accumulation of debt in shadow budgets was made clear.

Since the global economic and financial crisis at the latest, the **fundamental advantages of public infrastructure funding** have become the focal point of discussions again with renewed vigour, because of the fundamentally lower interest rates for public borrowing (Massarutto et al., 2008; Mühlenkamp, 2016). However, as the aforementioned debate regarding Maastricht criteria progresses, this option is being severely restricted by European and national fiscal regulations (Truger, 2015; Plank, 2018). As technical infrastructure has a very high proportion of capital costs that have to be funded in the long term, the **disadvantage** of tying them down politically and economically is significant and is difficult to make up for through **PPP models**.

Beyond this, however, the additional transaction costs arising in PPPs must also be considered. As discussed in detail in Chapter 2, these should not be underestimated, because of the particular characteristics of water supply and sanitation. In this respect, Ménard and Peero (2011) summarise their review of regulatory models for water supply and sanitation systems as follows: with “**PPPs, we are immediately confronted to standard problems of tariff increases, under-investment, especially towards the ending period of contracts, risk-averse strategies of operators so that public authorities tend to bear most of the uncertainties, and the very high rate of renegotiations, all of which questions the presumed efficiency of this mode of organization**” (Ménard

and Peero, 2011: 322). With regard to the various transaction costs, it should also be noted that opening up the market and deregulation, particularly in the infrastructure industry (e.g. through local monopolies), leads to the need for a significantly reinforced regulatory system, for example through regulatory authorities. The (public) costs of regulatory authorities should not be ignored in this respect (Ménard, 2017).

In light of this increasing scepticism and the unfulfilled expectations, debates about the return of provision services to the public sector have intensified over the last decade. This will be discussed in more detail in the following section.

5.4 Re-municipalisation in water supply and sanitation

Until recently, the literature on returning water supply and sanitation systems to the public sector was primarily shaped by individual case studies. One new study (Kishimoto and Petitjean, 2017) attempted to close this gap to gain a more complete picture of the extent of **re-municipalisation**. This involved researching a total of 267 cases for the period of 2000-2016, in selected countries in Europe, Asia, North America and Latin America. These cases represent provision for more than 100 million people who are now supplied by the public sector (Kishimoto and Petitjean, 2017). The most prominent country is **France, the “homeland” of private water supply and sanitation systems**, with 106 cases. The 56 cases in the **USA** are also striking, arising en masse in the second half of the 2000s. In **Spain**, the majority of the 26 recorded cases in recent years occurred in the context of prolonged austerity measures and new local political configurations (particularly the rise of PODEMOS) in various Spanish cities. In the following sections, the experiences of re-municipalisation in the countries under investigation will be looked at more closely.

5.4.1 France

The “French model” was and is considered to be the model for increasingly involving the private sector in providing the water supply and sanitation (Barraqué, 1992; OECD, 2007). Nevertheless, the dominant role of the (three large) private companies only emerged in the 1970s. These companies continued to consolidate their position until the 1990s, through measures notably including state support (Pezon, 2000; 2002; Hall et al., 2013; Lieberherr et al., 2016b). **Since the mid-2000s, the significance of public provision has, however, been increasing steadily, both in water supply and in sanitation** (see **Table 16**). One key parallel trend which supports the return to public forms is the increasing role of inter-municipal cooperation (Petitjean, 2017). This trend emulates the Austrian and German examples, in which inter-municipal solutions have been well-established for a long time. One current meta-study by Silvestre et al. (2017) on the role of horizontal (between communities) and vertical (between administrative levels of the state) cooperation in the water industry emphasises the economic advantages of this institutional setup.

% of population provided for			1998	2004	2014
Water supply	Form of cooperation	Municipal	42 %	33 %	27 %
		Inter-municipal	58 %	67 %	73 %
	Management model	Public ("regie")	32 %	28 %	39 %
		Private	68 %	72 %	61 %
Sanitation systems	Form of cooperation	Municipal	42 %	30 %	29 %
		Inter-municipal	58 %	70 %	71 %
	Management model	Public ("regie")	46 %	46 %	61 %
		Private	54 %	54 %	39 %

Table 16: Population provided for according to types of organisation in France (in %)

Source: Authors' representation and calculations based on IFEN (2007); SISPEA (2017).

It is worth mentioning that not a single larger city in France has changed from public provision to "delegation" by the private sector over the past twenty years (Petitjean, 2017). Even in the cities that have decided against re-municipalisation, the decision was only made once the private companies were forced to implement significant price reductions and make additional commitments with regard to the quality of water or investments. It is equally interesting that some **re-municipalised companies are taking additional steps towards opening up to stakeholders and citizens**. Various forms of extended democratic participation in the company count towards this, e.g. increased transparency regulations, representation of stakeholders and citizens in management committees and citizen initiated and managed water surveillance positions (Petitjean, 2017). One model example which could become popular in France is the attempt made by the re-municipalised Parisian company "**Eau de Paris**" to support the **conversion to organic farming** in an important **water catchment area** in the Vanne Valley (Vincent and Fleury, 2015). This integrated approach breaks with the dominant rationale in the French water sector which previously focused predominantly on expensive processing technology (Lieberherr et al., 2016b).

Nice: A conservatively governed city becomes municipal after 150 years of private provision

In 2013, the city of Nice decided to re-municipalise the water supply system which had been under fully private control since 1864. Despite intense political debates in France about private water supply and some symbolic re-municipalisation processes, this decision, made by the conservative local authorities, came as a surprise to many. From an administrative perspective, there were long-term pragmatic considerations for re-municipalisation; as such, the decision was motivated more by these considerations than by citizen protests. The publicly-owned company "Eau d'Azur" was established in 2013 and was providing for Nice's neighbouring communities just a year later. The existing public companies were incorporated in 2015, which meant that approximately 80 % of the metropolitan population is now provided for publicly.

The process of re-municipalisation itself was preceded by strict monitoring processes for performance and the organisational structure. Furthermore, the city also re-municipalised other sectors at the same time (e.g. public transport, school canteens, etc.). In Nice, this re-municipalisation was essentially motivated by strategic considerations, particularly by the principle of "territorial solidarity" within the metropolitan region of Nice Côte d'Azur. As France's first metropolitan region, it has a number of unique characteristics with respect to both its geography and its history. Strong interdependencies connect the city and countryside which is why the local council felt private organisation of water supply was unsuitable. The transition from private to public supply was astonishingly smooth. This was partly because it was possible to build on the previous experience gained in the context of common advocacy

groups for public suppliers. Furthermore, efforts were also made towards becoming more independent of the three vertically integrated private water companies by developing and sharing collective operational resources. The central role of such collective arrangements is demonstrated quite notably within the framework of Germany's energy transition as well.

Source: Petitjean (2015), Cumbers (2014)

5.4.2 Germany

In Germany, the nationally aggregated industry association data points towards an increase in public forms of organisation in the field of water supply. While in the mid-1980s, more than 90 % of water supply companies were run as companies under public law, this proportion dropped to 56 % in 2008. Since then, the proportion of public forms of organisation has increased by almost 10 % again. The sanitation industry is traditionally characterised by public forms of organisation (Branchenbild Wasserwirtschaft (Water Industry Sector Overview) 2005; 2008; 2015). This reveals a rise in inter-municipal cooperation through the increase of industry association solutions (special purpose associations, water/soil associations and associations with special legal status). At the same time, the proportion of state-run companies has fallen from 44 % to 7 %.

The “Rostock model” – From a PPP flagship project back to public ownership

In 1993, the urban water and wastewater systems in the city of Rostock and the 28 surrounding communities were privatised for 25 years under a contract with Eurawasser Nord GmbH (originally part of the SUEZ Group) within the scope of a concessions agreement. Approximately 200,000 inhabitants and 320 employees were affected.

The communities complained of a lack of transparency and later also a lack of influence over the private operator. Compared to other cities, the prices are roughly 20 % higher. This does not, however, automatically lead to higher quality or significantly more investment in water networks. In 2011, the company was sold by the private owner to the REMONDIS Group and the municipalities affected had no say over the sale.

In 2014, Rostock's city assembly decided to terminate the contract at the end of its term in 2018, in consultation with the 28 other municipalities. Following this decision, Eurawasser Nord GmbH stopped sponsoring some sports associations and events in the city. As of 1 July 2018, the municipal Nordwasser GmbH has assumed the provision of water and sanitation for the Hanseatic city of Rostock and the special purpose association for water and sanitation in the Rostock area with its 28 surrounding municipalities.

Source: Hecht (2015), Gahrman et al. (2012)

One current study on water suppliers in Germany's 100 largest cities, which supply 30 % of Germany's population and are responsible for approximately half of all drinking water, also suggests a return from partial privatisation (Hesse et al., 2016). With regard to the shifts observed in ownership structures, the authors highlight restructuring in the energy sector as an indirect cause (ibid.). Beyond this, however, the shifts discussed above point towards public forms of organisation and a return to public ownership. Overall, various different reasons are proposed for this re-municipalisation, including unfulfilled expectations with regard to privatisation, public pressure by civil campaigns and legal aspects (Lieberherr et al., 2016b; Bönker et al., 2016; Terzic, 2017).

5.4.3 Hungary

In Hungary, most of the privatisations in water supply and sanitation from the 1990s were reversed. This trend was determined by two elements. Firstly, **high company profits and high water prices caused some cities to aim towards re-municipalisation during the 2000s**. In this context, some cities complained of the intense political pressure from France and other nations to stop pursuing these efforts (Hall and Lobina, 2012). Secondly, **Viktor Orbán's** assumption of power and his increasingly **nationalistic course of "illiberal democracy"** was also a factor (Krastev, 2017). In the context of this, first individual cities (e.g. Pécs, Borsodviz, Budapest) and later the national government started buying back previously privatised companies and/or shares in these (see Kishimoto and Petitjean, 2017). The Orbán government justified this approach (which, interestingly, was sold as a conservative policy) predominantly through the argument that foreign private companies had abused their market position by imposing excessive prices.

In the field of water and sanitation, the national government undertook quick and extensive **sector-wide centralisation** and took numerous measures that were diametrically opposed to the deregulated, decentralised institutional environment (Horvath, 2016). These included central administrative price regulations as well as specific taxes and fees that increasingly marginalise the municipalities as players. In this context, the Hungarian developments are characterised more by **the central government's overemphasis on administrative and bureaucratic solutions** and a focus on the short term than by local municipal autonomy and economic self-governance.

Budapest Waterworks – A complete U-turn within eight years

In 1994, negotiations began to privatise Budapest Waterworks (Fővárosi Vízművek Zrt), leading to concessions being granted in 1997 to a consortium of RWE and SUEZ for the following 25 years. During this process, 25 % of the waterworks were sold; the rest remained under public ownership. Over the next 15 years, water prices doubled, despite the fact that maintenance of the network infrastructure was being neglected. Following increasing criticism of private companies, István Tarlós, elected Mayor of Budapest in 2010, made political demands for the repurchase of shares, which were then adopted by the city council in 2012. After lengthy negotiations, the purchase price was ultimately set at EUR 52 million, just less than the sale price at that time. In this process, it was possible to make savings on the "service fees", set at EUR 100 million, that the city would have had to pay to both companies before the end of the contract in 2022.

Source: Halmer and Hauenschild (2014).

5.4.4 Portugal

In Portugal's water supply and sanitation system, there have been no known cases of re-municipalisation so far, with just one exception. This exception concerns the first concession concluded in Portugal since privatisation in the 1990s.

In December 2016, the municipality of Mafra made a unanimous decision to terminate the concession agreement with the Chinese company Be Water ahead of time. Be Water had only bought the concession company from Veolia in 2013. The reason for this was the decline in demand following the economic crisis; the income from drinking water and the capacity of water purification plants had fallen below the contractually specified level, particularly since 2012. In 2016, Be Water demanded compensation for this, amounting to a sum of EUR 19 million, and asked the municipality for permission to implement a 30 % price increase. The municipality denied the request and came to the conclusion,

through a feasibility study, that prices could be reduced by up to 5 % by transitioning to public provision. As compensation for the premature termination of the contract, the company is demanding approximately EUR 50 million, while the municipality calculated just less than EUR 20 million (STAL (Local Authority Workers' Union), 2016).

5.4.5 England and Wales

English and Welsh water supply and sanitation have been shaped by **two opposing developments** since the first great crisis around the beginning of the millennium (Bakker, 2003b). On one hand, the business model of the nine **English regional monopolies is increasingly driven by the financial market** (see Chapter 6). On the other hand, the supplier **Dwr Cymru (Welsh Water)**, which operates in Wales, is pursuing a **different path, focused on the common interest**. Even if this does not correspond to a narrow definition of re-municipalisation, the orientation towards the common interest has many parallels with the more wide-ranging aims of publicly-owned companies (Mühlenkamp, 2015).

Since its establishment and acquisition by a US energy company (Western Power Distribution), the company no longer has any shareholders and belongs to itself. As such, all profits are reinvested, transferred to consumers in the form of lower prices, or used to pay off debts. While the nine English suppliers have increased their levels of debt – sometimes drastically – since the early 2000s, **Dwr Cymru is the only company to have lowered its debt-to-equity ratio (from about 90 % to almost 57 %)** (see **Figure 10**). As such, it also has the best credit rating in the water sector and thus, more favourable conditions for funding, which makes further cost reductions possible. Equally, in the last 15 years, around 180 million pounds has been paid out in “customer dividends” and 10 million pounds has been spent on disadvantaged customer groups and social tariffs. The moderate progression in water prices can be seen in the fact that the average water bill is lower now in real terms than it was in 2000. In current political discussions about re-orientation, the Welsh model is one of the available options (Financial Times, 2018).

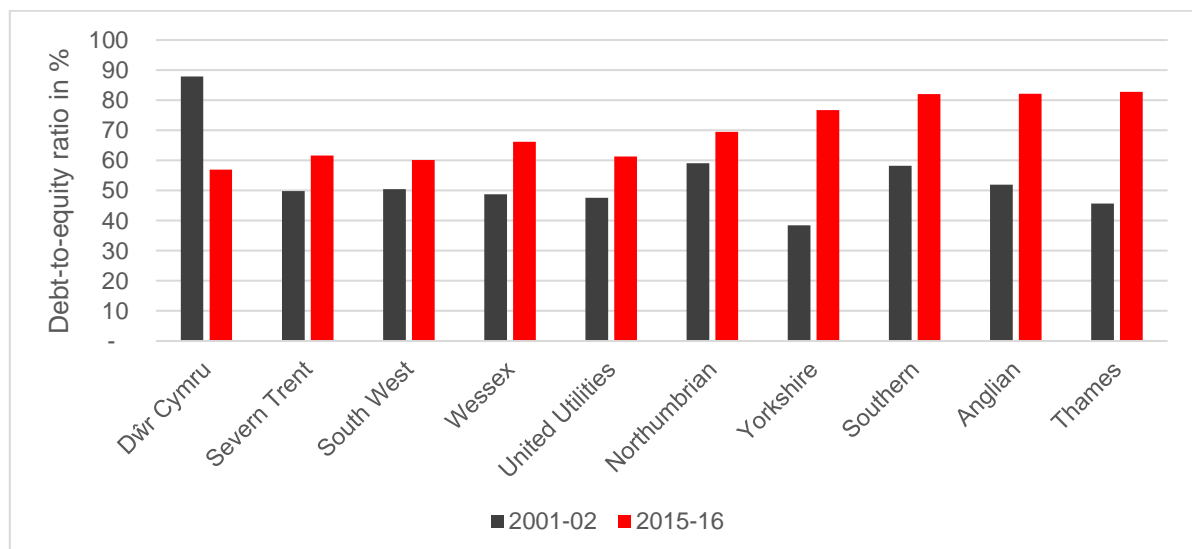


Figure 10: Debt-to-equity ratio of English and Welsh suppliers (2001 vs. 2016).

Source: OFWAT (2018).

5.4.6 Austria

In Austria, the re-municipalisation phenomenon is difficult to describe accurately because it is rare to find instances of privatisation in the water supply and sanitation industry (Terzic, 2017).

6 FINANCIALISING THE WATER SUPPLY AND SANITATION INDUSTRY

6.1 Financialisation as a new phenomenon in the provision of infrastructure

Traditionally, debates about infrastructure economics focus on the question of apportioning responsibility for providing central infrastructures and analyse the advantages and disadvantages of different regulatory and organisational models (see also Chapter 2). In light of the **financial sector's increasing importance for the economy and society**, the incorporation of the financial sector seems to be a crucial addition to these perspectives because financial investors' reasoning, which focuses on short and medium-term profits, can obstruct longer-term prospects and sustainable infrastructure funding and provision (Bowman et al., 2015; Mazzucato, 2018).

The discussion about “**financialisation**” seems to be timely in the infrastructure sector not least because there are **numerous political initiatives** at various levels for opening up the infrastructure sector – including water supply and sanitation – to financial investors. Since 2010, the **G20** group has worked hard to include institutional investors who could contribute private capital to close the “Infrastructure Gap” (McKinsey Global Institute, 2016). Since then, national governments and a variety of international public financing institutions, including the **World Bank, OECD and multilateral development banks**, have developed numerous re-regulation proposals and implemented initiatives for incorporating private capital. At a European level, the **Juncker Plan (EFSI, European Fund for Strategic Investments)**, among others, is attempting to attract private capital in particular, as part of an investment campaign. In Germany, proposals for involving institutional investors have also been developed as part of the **Commission for increasing investment**, initiated by Sigmar Gabriel and led by **Marcel Fratscher** (Plank, 2018). In Austria, at a political level, the SPÖ's “Plan A” recently found fault with the increased involvement of **private capital in the not-for-profit housing industry** (SPÖ (Social Democratic Party of Austria), 2017). Finally, the OECD recently made its mark with regard to the water sector when it headed a report on this topic with the, probably rhetorical, question “Water – Fit to Finance?” (OECD, 2015b).

In academic literature, a multi-disciplinary research programme has been developing since the 1990s under the title of “financialisation”, focusing on the increased importance of the financial sector and its effects on the economy and society. In its broadest, most general definition, financialisation means “**the increasing importance of financial markets, financial motives, financial institutions, and financial elites in the operations of the economy and its governing institutions, both at the national and international levels**” (Epstein, 2005: 3). Particularly since the global economic and financial crisis of 2008/09, research into financialisation has developed and become differentiated significantly. One of the attempts at differentiation that is frequently used subdivides the work on financialisation into three strands (French et al., 2011). The oldest strand chronologically speaking focuses on the macroeconomic level of the nation-state and the changes it undergoes. The second

strand focuses on the level of companies and particularly analyses the consequences of the shareholder value paradigm. Finally, the third and most recent strand takes private households and their behavioural changes (pension systems, property market, etc.) into account, particularly from a sociological and cultural science-based perspective. In this chapter, “financialisation” will be used as a general term to refer to a phenomenon in which financial investors (and therefore the logic of financial markets) invest in companies, but, in contrast with the functionality of medium and long-term business models, they aim for a short-term maximisation of the “shareholder value” (referred to as the short-term “rationale” of financial markets). The consequences of this shall be discussed in the following sections.

6.2 Variations of financialisation in water and sanitation systems

6.2.1 Key example: England

The development of the **nine large English water companies** since the early 2000s presents a **typical example for investigating financialisation at a company level** associated with the idea of the “shareholder value” doctrine.

After the first phase of privatisation generated a very fragmented and – ideologically justified – shareholder democracy,¹⁴ this changed rapidly when the British government abandoned its strategic “golden share” in 1994 (Helm and Tindall, 2009). The English water providers were attractive acquisition targets, particularly for European and US infrastructure companies, because of their financial figures (high liquidity, barely any debt with high and secure revenues). The arrival of these foreign companies was also accompanied by a concentration process for the shareholders.

Towards the end of the 1990s, profit prospects for the new owners began to deteriorate because of the change of government (New Labour) and in connection with this, the more drastic regulatory measures taken by the OFWAT regulatory authority (Schiffler, 2015). In addition, it emerged that the profit expectations that (energy) companies had generated in relation to the new business area were set too high (Hall et al., 2013). This meant that in the 2000s, a second significant shift took place for shareholders from infrastructure companies to financial investors (Bakker, 2003b). With appearance of this shift, the **business models** and practices changed again and shifted further **towards financialisation**.

Since then, most of England’s nine water companies have been controlled mainly by financial investors. Of the companies originally privatised via the stock exchange, there are now only three listed on the London Stock Exchange: Severn Trent Water, South West Water and United Utilities. These are largely controlled by financial investors. Two more companies (Wessex Water and Northumbria) belong to Asian infrastructure companies while the remaining four companies are each owned by special purpose entities. The latter were established by financial investors and three out of four are registered in an offshore financial centre.

An analysis of these companies’ annual balance sheets reveals some essential aspects of financialised business models (**Table 17**). Critically, it becomes clear that the principle of “**retain and invest**” (Lazonick and O’Sullivan, 2000), which is even more important for infrastructure companies than other

¹⁴ From Margaret Thatcher’s memoirs: “Privatisation (...) was fundamental to improving Britain’s economic performance. But for me it was also far more than that: it was one of the central means of reversing the corrosive and corrupting effects of socialism... Just as nationalisation was at the heart of the collectivist programme by which Labour Governments sought to remodel British society, so privatisation is at the centre of any programme of reclaiming territory for freedom” (Thatcher, 1993: 676).

companies (the principle of continuously investing profits gained into the long-term maintenance of infrastructure), is systematically violated. **To give a concrete example, in the period from 2007 to 2016, more than 96 % (18.1 billion pounds) of the 18.9 billion pound profits (after tax) were distributed as dividends.** Instead of distributing these profits, it would have been possible to put them to an alternative use, for instance by reinvesting them in infrastructure, reducing debts, lowering prices for consumers or increasing pay for employees. It is also interesting to note that three companies (Anglian Water, Severn Trent Water and Yorkshire Water) actually paid out more than they gained in profits (see **Table 17**).

Company	Profit (Before tax)	Tax	Profit (After tax)	Dividends	Profits retained	Net finance costs
Anglian Water	3,019	-12	3,007	3,709	-702	-1,388
Northumbrian Water	2,173	-326	1,848	1,808	40	-1,133
Severn Trent Water	2,434	-177	2,206	2,442	-236	-2,125
South West Water	1,385	-195	1,190	1,014	176	-627
Southern Water	1,360	-171	1,060	667	394	-1,629
Thames Water	3,361	-195	3,166	2,531	634	-3,006
United Utilities Group	4,244	-439	3,805	2,663	1,142	-2,053
Wessex Water	1,421	-232	1,190	1,118	72	-741
Yorkshire Water	1,310	81	1,391	2,179	-787	-1,947
Total	20,707	-1,666	18,862	18,129	733	-14,650

Table 17: Selected figures for English water and sanitation suppliers (cumulative, 2007-2016)

Source: Authors' representation based on Bayliss and Hall (2017).

As the majority of profits gained is distributed among the shareholders, further **borrowing** is the only option for **financing infrastructure investments**. Indeed, investments were not financed by owners or by profits that were kept and reinvested, but instead by privately-borrowed finance. As a result, the debt-to-equity ratio has increased significantly since privatisation in 1989 (when the companies' debts were written off completely making them free from debt).

In light of this, the **major role of finance costs**, as shown in **Table 17**, is unsurprising. This table demonstrates that England's nine suppliers spent approximately 14.6 billion pounds on finance costs over the period of a decade – or 1.5 billion a year. As was previously explained in connection with PPPs (public-private partnerships), finance costs are significantly higher for private than public actors. In relation to this, Bayliss and Hall (2017) estimate that **at least 500 million pounds could be saved every year by cheaper public finance**, based on the finance conjectures of the regulatory authority OFWAT.

The **debt-to-equity ratio** is particularly high for the companies controlled by the four special purpose entities. This is not a mere coincidence as their business model differs by being based on a complex **corporate structure** which is **not transparent** for third parties, including complicated securitisation of a finance company in the Cayman Islands (Bayliss, 2016). In this context, the company regulated by OFWAT is surrounded by a network of numerous subsidiaries whose ultimate purpose is to obtain

funding (interest, dividends, internal credit payments, etc.) from other subsidiaries or to pay out to these. Allen and Pryke (2013) took Thames Water (London's supply company) as an example for their case study in which they showed which mechanisms came into play for this. **Figure 11** shows a schematic representation of the internal flows of finance for this company in 2015.

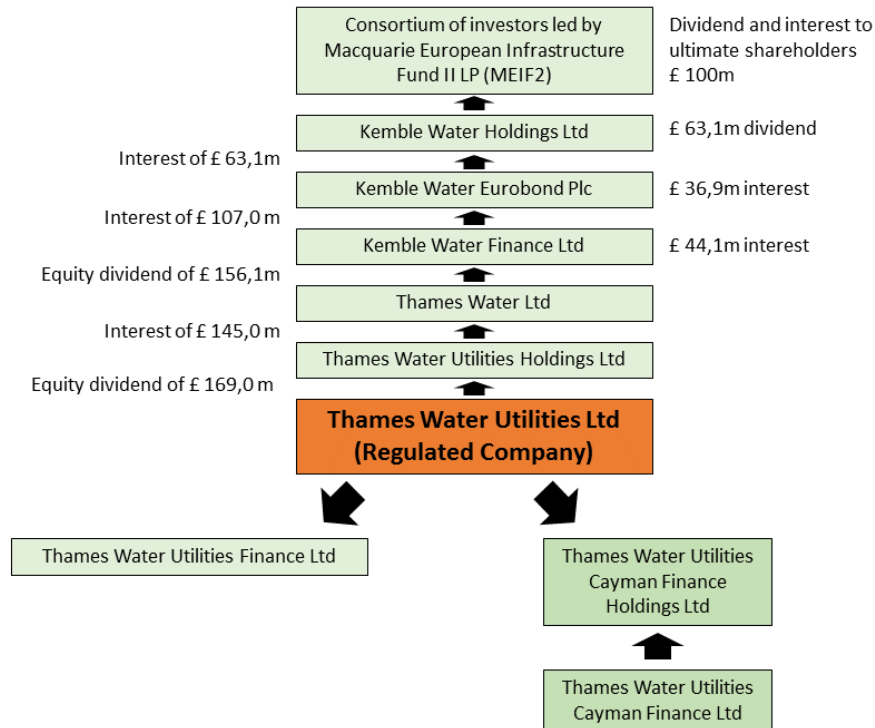


Figure 11: Thames Water Utilities Ltd. corporate structure and flow of funding

Source: Authors' representation based on Bayliss (2016).

One of the key reasons for this indecipherable corporate structure is the option of increasing borrowing (Bayliss, 2016) – beyond the unit subject to OFWAT borrowing regulations. Another reason is the need to finance the high **dividend payments to shareholders** and to gain **tax benefits** (Allen and Pryke, 2013). Finally, increasing private corporate borrowing is attractive because interest rates for borrowed capital reduce tax liability while dividends for equity do not (Leaver, 2017). This is particularly interesting if internal profits are shifted as a result and can therefore be paid out (see Chapter 6.2.2).

As **Table 17** also shows, the English water suppliers pay very little corporate income tax, despite their high profits. Over the period in which systems were observed, the cumulative profits accounted for in the profit and loss statement totalled just under 1.7 billion pounds. This is equivalent to approximately 8 % based on total profits reaching 20.7 billion pounds (before tax).

According to investigations by the regulatory authority OFWAT, **capital costs** – particularly the dividend payments to owners and the interest payments for borrowed capital – make up around **27 % of the price paid by end consumers** (OFWAT, 2011a; OFWAT, 2011b). This shows that ultimately, the consumers bear the economic costs of this business model. An alternative scenario, based on the Dutch public model, could potentially bring significant savings through cheaper public funding and reinvestment of profits (instead of complete distribution among stakeholders), according to one rough estimation (Hall and Bayliss, 2017).

One finding from the financialisation literature is that the cost and spending structure changes during the implementation of financialised business models, and that the proportion of funds spent on employee wages decreases while the proportion for the top layer of management and for owners increases. As **Table 18** shows, this can also be demonstrated in England. We can see that the proportional remuneration of the top layer of management in relation to revenue rose by 56 % between 2003 and 2013, coinciding with the introduction of financial investors to this sector. In contrast, the proportion spent on wages and salaries fell by a third from 15 % (1993) to 10 % (2013). Finally, the proportion spent on interest payments in relation to revenue increased by 400 % from 5 % (1993) to almost 20 % (2013).

	1993	2003	2013
Management pay/revenue (in %)	0.13	0.13	0.21
Wages and salaries/revenue (in %)	15.4	11.4	10.2
Interest payments/revenue (in %)	4.6	14.4	19.5

Table 18: Selected average proportion of spending by English water supply companies (in % of revenue)

Source: Authors' representation based on Bayliss (2013).

The **increased wage differentiation in companies** is also consistent with the implementation of the shareholder paradigm, in which the interests of the top layer of management are more closely tied to shareholder interests (compared to the company's interests) through components of remuneration that are dependent on success. In 1993, the highest paid manager earned seven times the pay of an average employee; 20 years later, the highest paid manager earned almost 30 times as much (Bayliss, 2013).

While the reduction in costs for the average employees is regarded as a sign of improved efficiency, the same cannot be said of remuneration for the top layer of management. Evidently, the **high and rising borrowed finance costs are also subject to a different set of criteria** although it would be easy to argue that this spending should absolutely be conditional upon the same considerations for efficiency (Bayliss, 2013). However, the regulatory authority (OFWAT) does not see this as part of its responsibility, as the following quote shows: "The regulator has previously taken the view that the capital structure of the companies (and consequent risks) is for the boards and shareholders to determine. And this view continues as long as the water utility is not put at risk" (OFWAT, 2013: 9, cf. Bayliss 2016). This generally indicates the **difficulties of this regulatory model** in which the regulator does not and also cannot take the activities of players on the financial market into account (Foundational Economy Collective, 2018).

6.2.2 The French model: Global corporate structures and the local water industry

From the perspective of long-term historical development, the French water companies represent a historical exception (see e.g. Chapter 5.1) in the otherwise publicly controlled water and sanitation industry. As Pezon (2000) documented, French companies strengthened their market influence across the nation in the second half of the 20th century, and from the 1990s onwards, they drove forward the internationalisation of their business activities concerned with water, in light of increasingly saturated markets in France (Hall and Lobina, 2012a). This **expansion** was effectively **halted** in the **2000s**, when privatisation by means of risky PPP agreements proved to be problematic (see also Chapter

5.3.1). In light of this, the strategies of French market leaders also began to change (Hall, 2006; OECD, 2010). This involved the companies making attempts to reduce their involvement in countries in which the desired profits could not be generated or only a low level of returns was possible (particularly developing countries). In order to lower the risk associated with long-term investment, the companies implemented two strategic changes. Firstly, increasing efforts were made to conclude lower-risk management or service contracts. Secondly, various financial assets were sold to financial investors who used these in turn for the creation of various new financial products. One key motivation for this was to reduce debts accumulated over the course of expansion (Hall, 2006).

A less visible, and also not necessarily always intentional, consequence is the **increasing dependence of French companies on the public sector**. This does not relate to the state-protected monopoly on PPP contracts, but rather to the rescue and temporary take-over of companies by the state during the second half of the 2000s as well as the increasingly important role of international finance institutions as public investors.

Saur, the smallest of France's three water companies, was originally controlled by the French construction company Bouygues, before being sold for EUR 1 billion to PAI – the private equity company of the French Bank Paribas – in 2004. PAI initially planned to sell the company to the Australian **infrastructure company Macquarie**, but the sale was not completed, however, partly because of the **concerns raised by French mayors**. Instead, the state-run Caisse des dépôts et consignations (CDC; Deposits and Consignments Fund) organised a “French” consortium which purchased Saur for approximately EUR 2.3 billion. The difference of EUR 1.2 billion between the two sales is particularly striking, marking a huge gain from the value increase that the private equity company PAI was able to achieve. The consortium was made up of the state-run “Fonds Stratégique d'Investissement (FSI)” (38 %), the waste management company Sécché Environnement (33 %, which is itself subject to 20 % state (FSI) control), AXA Private Equity (17 %) and Cube Infrastructures (12 %, a private equity company of the French investment bank Nataxis). Following **further financial problems, the majority of creditor banks agreed in 2013 that it was necessary to convert their debt into equity capital** (Financial Times, 2013). Since then, work has been under way to sell to international investors.

For **SUEZ, too, the French government has been the most important shareholder since 2009**. In order to avoid a hostile takeover, SUEZ was merged with the state-run Gaz de France (GdF). Following this, Suez S.A., which contains the French water industry SUEZ Eau France, is now controlled by ENGIE (formerly Suez-GdF) with a majority stake of 36 %, which in turn is held under majority state ownership (36 %).

Finally, the French government is also the largest shareholder of Veolia with more than 13 % of shares, of which approximately 9 % are owned by the Caisse des dépôts et consignations (CDC) and 4 % by EdF. Since 2011, Veolia has initiated strict restructuring in light of the Euro crisis and shrinking margins in the core activities of the French water market (Boxell, 2012). This restructuring procedure involves selling off various business units held abroad. This should settle approximately EUR 5-6 billion of debt.

However, these processes in **Veolia** should also be analysed in connection with complex internal flows of finances and mechanisms of “**financial engineering**”. Bowman et al. (2015) show very clearly how the parent company Veolia managed to withdraw funding from the British subsidiary Veolia Water UK PLC for dividend payments while simultaneously transferring debts to this subsidiary, through various mechanisms.

This development – incidentally completely legal, just like the other processes described here – originated with a net asset value gain for English subsidiary Veolia Water UK PLC in 2010. This arose during the process of converting the accounting standards from historic cost values to current market

values. Through this revaluation, financial assets increased significantly and – because of the accounting equivalence of the double-entry bookkeeping system – so did the equity capital of Veolia Water UK PLC, by 436.6 million pounds. The asset value gain and valuation gain for the parent company was harnessed by granting the subsidiary an internal credit (216.9 million pounds [long-term] and 108.9 million pounds [short-term]) and funding a dividend payment of 321 million pounds for the parent company Veolia with this credit. The additional advantage from the parent company shareholders' perspective is that the interest payments to the British government for internal credit further decreases the already low tax rates (see Chapter 6.2.1).

The consequences of these internal shifts and actions often remain unseen in the aggregate balance sheets of the parent company. These effects only become clear during the sale of parts of the company – as was the case with the sale of Veolia Water UK PLC to a consortium of financial investors in 2012. Within the context of this complex purchase, funded by borrowing, the French parent company was able to redeem 1.2 billion pounds and thus gained accounts payable that were used to pay dividends from the consolidated balance sheet, including accounts payable for internal credit. In addition, an extra dividend amounting to 60 million pounds was also paid out in the year of sale. In this context, it is also important to mention that the French parent company increased its dividend payments from EUR 434 million in 2009 to approximately EUR 736 million in 2010, against the backdrop of deteriorating market prospects. This increase corresponds approximately to the extra dividend generated by the English subsidiary.

A study by Matt (2017), commissioned by the green party in the European Parliament, demonstrates that this is not necessarily an isolated incident but rather it points towards a certain systematic approach. This study reveals that an **increasingly small portion of the profits generated in France by Veolia Environment are actually taxed**. Matt (2017) estimates that Veolia has saved approximately EUR 2.7 billion on tax in France, the USA and the United Kingdom since 2001, by using tax consolidation, of which EUR 572 million was saved in the period from 2012 to 2016 alone. Tax consolidation means that subsidiaries calculate their tax liability individually within the framework of tax consolidation and pay this to the parent company, which is particularly interesting when some of the subsidiaries make a loss that can counterbalance profits of other subsidiaries. The tax consolidation established in 2001 by Veolia Environment in France had accumulated an aggregate loss of EUR 3.6 billion by 2016. The net profits of the subsidiaries involved in the French tax consolidation scheme range between EUR 300 and 600 million a year. This suggests that almost all the profits generated in France by Veolia and its subsidiaries will likely not be taxed in the next ten years. This system is legally permitted and enables Veolia Environment to dramatically reduce taxes in France, even though profits were generated in France in terms of operation and accounting. Furthermore, this study indicates the need for increased **obligations regarding transparency and the duty to report**. This is because although **Veolia Environment has more than 2,728 subsidiaries, information is only publicly available for around 100 of them**. This should be taken even more seriously because Veolia Environment is active in France and also in the core areas of public service provision, which are essentially state-guaranteed monopolies and for which the government has assumed an implicit guarantee for the functioning of this crucial infrastructure.

6.3 Interim conclusions

In light of numerous political initiatives at various levels – from the G20 to the national level – the discussion about the financialisation of infrastructure and its potential consequences is gaining significance. The theoretical and empirical findings from the literature on financialisation, which is now

properly differentiated, point towards some potentially problematic areas that could become even more important for essential public infrastructure.

Based on this overview, it is possible to conclude that “**financialisation**” has also become widespread in **leading international water companies** since the 2000s, in connection with strategic realignment and the financial involvement of financial investors (for the Spanish company AGBAR, see March and Purcell, 2014). This is evident not solely from the increasing **importance of financial transactions and internal flows of funding for corporate success**, but also from the **growing debts that often serve to finance dividend payments** to shareholders. It should be emphasised that – as Chapter 2.1 explains – infrastructure associated with specific economic properties is linked with strong state involvement – or at least strong regulation in the sense of public provision. The discussion about the phenomenon of financialisation and the developments outlined here show that financial structures and financial market rationales can endanger the quality, affordability and security of supply in the long term, particularly in the field of vital public services for which there is no substitution available. Short-term profit expectations are paid for by the medium and long-term depreciation of systems. As the systems cannot be maintained or the companies meet financial issues because of crises or shifts in supply and demand on financial markets, state interventions become necessary again in order to ensure a proper supply for the population. As a result, two options arise: either the state has to intervene, which then indirectly requires a corresponding level of taxation (or lower dividend payments) from the population (e.g. from banks or supply companies under public ownership), or fees have to be raised for citizens in order to compensate for the losses.

The **impact of financial markets on providing infrastructure** – i.e. financialisation – thus indicates that those **regulatory issues** that are usually at the forefront of infrastructure economics and policy (justifying the need and effectiveness of state intervention and state planning and provision) have to be extended to **additional aspects** in order to ensure long-term quality of supply for the population. As stated above, this relates particularly to questions of tax legislation and accounting provisions but also encompasses new regulatory requirements, investment quotas, quality standards and the generation of profits.

In this respect, the previously **inadequate role of regulatory authorities** must also be mentioned. While OFWAT implements only a very limited regulatory model which largely does not take into account the central part of financing transactions, the French government also shows little interest in the financing side of water companies, even though the state is now one of the largest owners of these companies. Thus, it is clear that in addition to the “traditional” possible state failures (e.g. inadequate organisation of state tools of control), there are undoubtedly many more aspects, including the lack of regulation for financial investments in the infrastructure sector.¹⁵

Finally, in this context it is also important to emphasise the **strategic significance of infrastructure**, the functioning of which is **implicitly guaranteed by the state**. As the French case shows, the uncertainties which would have accompanied the takeover by foreign financial investors were an important reason for rescuing the companies with state aid.

¹⁵ This reasoning and the qualification of something as a “state failure” is made from the perspective of public provision (quality, affordability, strict regulation, etc.); of course, this qualification depends on one’s point of view. From the perspective of their proponents, fully deregulated financial and infrastructure markets may well not be viewed as a state failure but rather as an economic advantage which should not be regulated by the state.

7 CONCLUSIONS AND RECOMMENDATIONS

7.1 Conclusions for planning, investing in and operating municipal water supply and sanitation systems

Privatisation of the water management system, e.g. in England, and deregulation and outsourcing, e.g. in France, demonstrated decidedly little success. For all of the systems investigated, the question of whether to increase regulation of public services in the field of water management systems (re-regulate), or to re-municipalise these services or to find new forms of organisation in the field of public (municipal) suppliers has been/is being considered. In some cases, the state had to rescue failing private suppliers in order to stabilise them.

The existing experiences with PPPs in *France*, *Portugal* and *Hungary* give rise to pressing doubts about the advantages of private companies which were originally assumed in connection with the property rights theory. In accordance with economic theories (of infrastructure), the explanations provided for France, Hungary and Portugal must be based primarily on a **lack of competition** and/or difficulties in generating competition in the long term. At the same time, the inadequate **institutional framework** at a national and local level and the high **transaction costs** should not be overlooked. The latter occur not only in the operation and (public) monitoring of target attainment in private companies, but also primarily when changing the system.

The examples of Portugal and Hungary emphasise the fact that **PPPs** often produce a fiscal illusion. This is because the fundamental **budgetary issues** are simply postponed to a later date and, in the case of a stimulating, uncontrolled **shadow budget**, PPPs can even exacerbate the issues. Over the course of the economic and financial crisis, this resulted in a moratorium in Hungary and Portugal, after the accumulation of debt in shadow budgets reached 10-15 % of the public debt.

Since the global economic and financial crisis at the latest, the **fundamental advantages of public infrastructure funding** have become the focal point of discussions again with renewed vigour, as a result of the fundamentally lower interest rates for public borrowing. However, the options for public investment are sometimes significantly restricted by **European and national fiscal regulations**. As technical infrastructure has a very high proportion of capital costs that have to be funded in the long term, the disadvantage of tying them down politically and economically is significant and is difficult to make up for through PPP models (by outsourcing debts) and through lower ongoing payments that are nevertheless higher in the long term.

The sector-wide re-regulation required for efficiency and affordability – arising from economic specifics for infrastructure (e.g. natural monopolies, high transaction costs, etc.) – has been developing constantly in recent years, particularly in England but also in France and Portugal. This means that in France, for example, regulatory intervention was so rigorous that “commercial” and “economically liberal” approaches in the sense of a free market economy were barely present in companies. However, the regulatory authorities, particularly in England and Portugal, still face some great challenges.

The reconstruction of water management systems through deregulation and privatisation has undoubtedly led to some **high transaction costs** in the long term. Regulatory authorities, changes and constant adjustments of organisational forms as well as the implementation of various calls for bids (e.g. procuring concessions) bring about economic costs that have been **significantly underestimated** in the cases of England and France. The price increases and often also losses in quality are increasingly prompting decision-makers to re-municipalise provision or take private companies into public ownership. Alongside the higher interest rates for corporate loans and the very slight gains in efficiency, doubts about the overall economic efficiency of privatised provision services thus arise throughout.

In the systems of Austria and Germany, developments and adjustments in the sense of deregulation have taken place much more slowly (if at all) in the past – this can be seen as advantageous in light of the current experiences (expensive experiments). In general, however, the need for change is much lower. An efficient and high-quality water supply and sanitation system is associated with moderate and comparatively slowly rising prices; environmental and social aims (e.g. affordability) are generally achieved. (Overall, however, current studies also show that private households in all countries are satisfied with their water supply, although satisfaction is falling slowly in England, Wales and Germany.)

The water management is not well suited to allowing for short-term changes, for example in **financial investors' return expectations**, because of the very **long-term planning required**. Very durable systems in connection with sustainable use of resources make it possible to generate returns that are barely higher in the short term, without harming the systems. Because of high fixed-rate investment and system costs in comparison to ongoing staff and operation costs, savings are only possible with difficulty in the short term. As empirical discoveries have shown, the relatively high profits, e.g. of the English water supply companies, are detrimental to the longer-term quality of networks and the reliability of the supply and disposal system.

This does not mean that the public (municipal) bodies of authority are automatically guaranteed high-quality public provision. Even in the systems of Austria and Germany, which are characterised by high public-sector involvement, some **non-market competitive elements such as benchmarking are implemented to maintain funding**. The **potential for collaboration and for efficiency within and between the municipalities** has not yet been fully exhausted (e.g. through the proposed spending reviews). Additionally, some municipal water systems now face increasing legal problems as well (new and stricter management demands); in particular, public-public partnerships (e.g. through regional vertically integrated operators) may improve efficiency even further.

The question of **transparency, responsibility and traceability** is also a highly important argument. Outsourcing (also, e.g. in publicly-owned corporations) and privatisation mean that income, spending, fees and decisions in general that concern municipal provision are no longer transparent for citizens and often also not for appointed representatives. Even authorised political representatives at a municipal level barely have insight into the decisions and business transactions of municipal companies because of outsourcing now, let alone the information about private supply companies not included in published business reports. Governance of municipal provision and democratic control by the population of a community is therefore no longer guaranteed which in turn puts pressure on municipal autonomy as well. The **reinforcement of elements of participation** (e.g. stakeholder involvement in decision-making committees) and the establishment of **ombudsmen** should also therefore be strengthened in all forms of organisation, particularly private ones.

One interesting aspect has to do with possible innovations in public and private companies. Usually, it is assumed that innovations are implemented more thoroughly in private forms of organisation. The literature available shows that there are generally barely any differences in public provision with regard

to technical and organisational innovations (publicly-owned companies, including municipal state-run companies, are not less innovative than private suppliers). In contrast, certain innovations, specifically those that concern financial instruments and are only developed within the framework of financialisation, can also be harmful. Meeting the yield expectations of financial investors within the scope of new financial products often takes place at the expense of system quality, which can be seen from the literature available. (Some innovative financial products are also often identified as being damaging to the economy as a whole; these products and this lack of regulation on financial markets were crucial contributing factors towards the economic and financial crisis of 2008/2009.)

7.2 Recommendations for sustainable water supply and sanitation systems

Some recommendations relating particularly to the Austrian water management system are set out below.

- Because of the excellent levels of efficiency, quality and affordability of Austria's public water management system, revealed by the systems comparison, the authors of this study see no urgent need for action with regard to liberalisation or even privatisation. (In particular, this also applies to Germany's municipal water management system.)
- Implementation of exemptions for public investment from the European and national fiscal rules is urgently recommended. At present, the water management system is run cost-effectively on average. Making investments impossible, particularly in growing municipalities or in cases with higher technical or environmental demands, is not economically efficient. Normally, investments are also financed with debt capital in the private sector.
- The argument that reconstructing a functioning and high-quality water supply and sanitation system would be associated with high transaction costs, complex regulatory requirements and correspondingly large uncertainties with regard to the feasible gains in efficiency during system reconstruction causes the authors to serious reservations when formulating recommendations for further liberalisation measures. This is particularly because the systems comparison undertaken within the scope of this study demonstrates the significant advantages of public (municipal) provision with regard to levels of price, price development and also quality. The water management system should therefore be exempt from various regulations within the scope of the Concessions Directive.
- The advantages of public (municipal) provision can also be confirmed, particularly in light of the provision system that has been in place in Austria and Germany for a century. In cases of long-term, sustainable provision at affordable prices and high quality, there is no reason to propose that it is necessary to restructure or liberalise the system. However, public provision in the countries studied is not worse in many respects, but rather very often better than in liberalised or private systems.
- From an economic perspective with regard to infrastructure, water supply is a particular field of public services that is not suited for market competition because of high and long-term investment needs, aspects of sustainability (environmental and social) and the right to clean water. This does not mean that non-market elements of competition that are also implemented in Austria's water management system should be regarded as unimportant (e.g. benchmarking).

LISTS

Literature and sources

Abgeordnetenhaus Berlin (2018): Berlin wird Blue Community. Gemäß Beschlussprotokoll über die 24. Sitzung des Abgeordnetenhauses von Berlin am 22. März 2018: <https://berliner-wasser-tisch.net/assets/start/p18-024bs0565.pdf> (02.05.2018).

ABZ (2017), Inhouse-Vergaben und Interkommunale Kooperation. Auftragsberatungszentrum Bayern e.V.: <https://www.abz-bayern.de/abz/inhalte/Aktuelles/thema-des-monats2/januar-2017-inhouse-vergaben-und-interkommunale-kooperation.html?nl=true> (03.07.2018).

AK Europa (2017): Vorschläge der Kommission für ein Mandat für Handelsabkommen mit Australien und Neuseeland. COM (2017) 472; COM (2017) 469, Österreichische Bundesarbeiterkammer/Brüssel, AK Europa, Wien.

AK Österreich (2018): EU-Trinkwasserrichtlinie neu. COM (2017) 753 final, Stellungnahme, Österreichische Bundesarbeiterkammer/Brüssel, Arbeiterkammer, Wien: https://wien.arbeiterkammer.at/service/stellungnahmen/umwelt/EU-Trinkwasserrichtlinie_neu.html (05.07.2018).

Allen, J., Pryke, M. (2013), Financializing household water: Thames water, MEIF, and 'ring-fenced' politics. Cambridge Journal of Regions, Economy and Society, 6(3): 419-439.

Ambrosius, G. (1984), Der Staat als Unternehmer – öffentliche Wirtschaft und Kapitalismus seit dem 19. Jahrhundert. Vandenhoeck und Ruprecht, Göttingen.

Ambrosius, G. (2008), Konzeptionen öffentlicher Dienstleistungen in Europa. In: WSI-Mitteilungen 10/2008: 527-533.

AöW (2014), Neue Vergaberichtlinien (neue Konzessions-RL sowie Neuerungen in der klassischen Vergabe-RL und Sektoren-RL). AöW-Zusammenfassung, Allianz der öffentlichen Wasserwirtschaft e.V., 27.01.2014: http://www.aew.de/media/Mitgliederbereich/EU/AoeW_Zusammenfassung_Neue_Vergabe-RL_2014-01-31_final-berichtigt.pdf (03.08.2018).

AöW (2016), Wasserwirtschaft im Sog des Freihandels – CETA. AöW Positionspapier, August 2016: https://www.aew.de/media/Publikationen/Stellungnahmen/2016/AoeW_Positionspapier_CETA_Final_red_ueberarb_August_2016.pdf (03.08.2018).

AöW (2017), Stark durch Kooperation und Zusammenarbeit. AöW-Positionspapier. https://aew.de/media/Publikationen/Positionspapiere/FINAL_Einzelseitenansicht_Positionspapier-Stark_durch-August-2017.pdf (02.08.2018).

AöW (2018a), AöW-Position zum Vorschlag der Europäischen Kommission für eine Neufassung der Richtlinie über die Qualität von Wasser für den menschlichen Gebrauch (TrinkwRL-Vorschlag), 22.03.2018: https://aew.de/media/Publikationen/Positionspapiere/00_AoeW-Position_zum_Vorschlag_Neufassung_TrinkwasserRL_2018-03-22_Final.pdf (10.05.2018).

- AöW (2018b), AöW-Stellungnahme zum Wirtschaftspartnerschaftsabkommen zwischen der Europäischen Union und Japan, 14.05.2018: https://aoew.de/media/Publikationen/Stellungnahmen/2018/AoeW_Stellungnahme_EU_Japan_Abkommen__2018-05-14_final.pdf (30.06.2018).
- Araral, E. (2009), The failure of water utilities privatization: Synthesis of evidence, analysis and implications. *Policy and Society* 27(3): 221-228.
- Arens, Meinolf et al. (2017), Ungarn (Land): http://eeo.uni-klu.ac.at/index.php?title=Ungarn_%28Land%29 (01.09.2017)
- Bakker, K.J. (2003a), *An Uncooperative Commodity: Privatizing Water in England and Wales*. Oxford University Press.
- Bakker, K.J. (2003b), From public to private to...mutual? Restructuring water supply governance in England and Wales. *Geoforum* 34 (2003): 359-374. [http://dx.doi.org/10.1016/S0016-7185\(02\)00092-1](http://dx.doi.org/10.1016/S0016-7185(02)00092-1)
- Balanyá, B., Sabido, P. (2017), The Great Gas Lock-in. Industry lobbying behind the EU push for new gas infrastructure. Corporate Europe Observatory, Brüssel.
- Bank, M., Grotefendt, N. (2016), Regulatorische Kooperation in TTIP und CETA. Eine „Lobbybremse“ für Regulierungen. Lobby Control/Forum Umwelt und Entwicklung, Köln/Berlin.
- Bank, M., O'Brien, R., Verheecke, L. (2016), More cooperation for less regulation. In: PowerShift/ Canadian Centre for Policy Alternatives (Hrsg.), *Making sense of CETA. An analysis of the final text of the Canada-European Union Comprehensive Economic and Trade Agreement*. Powershift/ Canadian Centre for Policy Alternatives, Berlin/Ottawa: 43-46.
- Barraqué, B. (1992), Water management in Europe: beyond the privatization debate. *Flux* 8(7): 7-26.
- Barraqué B. (2010), Managing Potable water supplies. In: Ferrier, R.C., Jenkins, A. (Hrsg.), *Handbook of Catchment Management*. Wiley Interscience: 235-252.
- Barraqué B., Kraemer, A.R. (2014), Les services publics d'eau en Grande-Bretagne et en Allemagne: origine commune, trajectoires différentes. *Flux* 2014(3): 16-29.
- Baumol, W.J., Panzar, J., Willig, R.D. (1982), *Contestable Markets and the Theory of Industry Structure*. Harcourt Brace Jovanovich, San Diego.
- Bayliss, K. (2013), The Financialization of Water. *Review of Radical Political Economics* 46(3): 292-307.
- Bayliss, K. (2016), Material cultures of water financialisation in England and Wales. *New Political Economy*: <http://dx.dio.org/10.1080/13563467.2017.1259300>
- Bayliss, K., Hall, D. (2017), Bringing water into public ownership: cost and benefits. PSIRU Reports, May 2017.
- BDEW (2015), *VEWA – Vergleich Europäischer Wasser- und Abwasserpreise*. civity Management Consultants GmbH & Co.KG, Bundesverband der Energie- und Wasserwirtschaft e.V., Berlin.
- BDEW (2016), *Abwasserdaten Deutschland Strukturdaten der Abwasserentsorgung*, 3. Auflage, Berlin.
- BDEW (2017), *Wasserfakten im Überblick*: https://www.bdew.de/media/documents/Wasserfakten-Oeffentlicher-Bereich-November-2017_o_online_j_Mk_20112017_ula7DpQ.pdf (15.11.2017).

- BDEW (2018a), Wirtschaftsabkommen zwischen der EU und Japan. Das Freihandelsabkommen zwischen Japan und der EU enthält Liberalisierungstendenzen - auch für die Wasserwirtschaft Vergleich mit CETA. Positionspapier mit Expertise der Stadtwerke Karlsruhe, 25. Mai 2018, Berlin: https://www.bdew.de/media/documents/Stn_20180525_Positionspapier-Wirtschaftsabkommen-EU-Japan.pdf (05.06.2018)
- BDEW (2018b), Ergebnisse des BDEW-Kundenbarometers Wasser/Abwasser 2015: https://www.vewsaar.de/fileadmin/dokumente/Aktuell/Presse/2015/BDEW_Kundenbarometer_2015.pdf (27.02.2018)
- BDEW et. al (2015), Branchenbild der deutschen Wasserwirtschaft 2015. wvgw Wirtschafts- und Verlagsgesellschaft Gas und Wasser mbH, Bonn.
- BDI (2016), Bewertung CETA, Comprehensive Economic and Trade Agreement. Mai 2016, Bundesverband der Deutschen Industrie e.V.: https://bdi.eu/media/themenfelder/internationale_maerkte/publikationen/201605_Bewertung_CETA.pdf (03.08.2018).
- Beecher, J. (2016), Economic regulation of water utilities. In: Finger, M., Jaag, C. (Hrsg.), The Routledge Companion to Network Industries. Routledge, Abingdon, Oxon (U.K.): 254-268.
- Bel G., Miralles, A. (2003), Factors influencing the privatisation of urban solid waste collection in Spain. Urban Studies 40(7): 1323-1334.
- Bel, G., Warner, M. (2008), Does privatisation of solid waste and water services reduce costs? A review of empirical studies. Resources, Conservation and Recycling 52(12): 1337-1348.
- Bel., G., Fageda, X., Warner, M. (2010), Is private production of public services cheaper than public production? A meta-regression analysis of solid waste and water services. Journal of Policy Analysis and Management 29(3): 553-577.
- Berliner Wassertisch (2018), Berlin wird Blue Community – ein besonderer Weltwassertag: <https://berliner-wassertisch.net/assets/start/PM%20Weltwassertag%202018.pdf> (02.05.2018).
- Beveridge, R. (2012a), A politics of inevitability: The privatisation of the Berlin Water Company, the global city discourse and governance in the 1990s Berlin. VS Springer, Wiesbaden.
- Beveridge, R. (2012b), Consultants, depoliticisation and arena-shifting in the policy process: Privatisation water in Berlin. Policy Sciences 54(1): 47-68.
- Bieling, H.-J., Deckwirth, C. (2008), Privatising public infrastructure within the EU: the interaction between supranational institutions, transnational forces and national governments. Transfer 14(2): 237-257.
- BIPE (2006), Les services publics d'eau et d'assainissement en France – Données économiques, sociales et environnementales – 2. Ausgabe.
- BIPE (2010), Les services publics d'eau et d'assainissement en France – Données économiques, sociales et environnementales – 4. Ausgabe.
- BIPE (2012), Public water supply and sanitation services in France – Economic, social and environmental data. 5. Ausgabe, March 2012.
- BIPE (2015), Public Water and Wastewater Services in France – Economic, Social and Environmental Data. FP2E/BIPE Report, 6. Ausgabe.

Blagoeva, T., Rossing, C. (2015), Study on water services in selected member states. Final report for the European Commission, Quotation No 1/214-MARKT/C/2 under the Framework Service Contract MARKT/2013/130/C3/SE/FC, 15.07.2015, Ramboll, Kopenhagen.

BMASGK (2018), Lebensmittelsicherheits- und Verbraucherschutzgesetz – LMSVG. Bundesministerium für Arbeit, Soziales, Gesundheit und Konsumentenschutz: <https://www.verbrauchergesundheit.gv.at/lebensmittel/rechtsvorschriften/oesterreich/lmsvg.html> (01.03.2018).

BMGF (2015), Österreichischer Trinkwasserbericht 2011-2013, Annex. Bundesministerium für Gesundheit

BMG (2015), Bericht des Bundesministeriums für Gesundheit und des Umweltbundesamtes an die Verbraucherinnen und Verbraucher über die Qualität von Wasser für den menschlichen Gebrauch (Trinkwasser) in Deutschland. Berichtszeitraum: 1. Januar 2011 bis 31. Dezember 2013, Dessau-Roßlau.

BMLFUW (2007), Wasser in Österreich – Zahlen und Fakten. Bundesministerium für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft, Wien.

BMLFUW (2011), Anpassungsstrategien an den Klimawandel für Österreichs Wasserwirtschaft – Studie der Zentralanstalt für Meteorologie und Geodynamik und der Technischen Universität Wien im Auftrag von Bund und Ländern, Wien.

BMLFUW (2012a), Technische Herausforderungen in der Siedlungswasserwirtschaft. Bundesministerium für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft, Wien.

BMLFUW (2012b), Wasserverbrauch und Wasserbedarf – Auswertung empirischer Daten zum Wasserverbrauch. Bundesministerium für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft, Wien.

BMLUFW (2013), 20 Jahre Umweltförderung. Bundesministerium für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft, Wien.

BMLFUW (2014a), Trinkwasser und Wasserverbrauch. Abt. IV/3 Nationale und internationale Wasserwirtschaft – Trinkwasser: <https://www.bmnt.gv.at/wasser/nutzung-wasser/Trinkwasser.html> (13.07.2017).

BMLFUW (2014b), Österreichischer Bericht der Ist-Bestandsanalyse 2013. Bundesministerium für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft, Wien.

BMLFUW (2016a), Kommunales Abwasser – Österreichischer Bericht 2016, Wien.

BMLUFW (2016b), Umweltinvestitionen des Bundes 2015. Bundesministerium für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft, Wien.

BMLFUW (2017), Die Volkswirtschaftliche Bedeutung der Siedlungswasserwirtschaft sowie Gewässerökologie in Österreich, Wien.

BMNT (2017), Bundes-Abfallwirtschaftsplan 2017 – Teil 1. Bundesministerium für Nachhaltigkeit und Tourismus, Wien.

BMNT (2018). Kanal- und Wasserleitungsbestand – Stand Ende 2015: <https://www.bmnt.gv.at/wasser/wasser-oesterreich/zahlen/anlagenbestand.html> (17.05.2018).

Boda, Z., Scheiring, G. (2006), Water privatisation in the context of transition. In: Chavez, D. (ed.) Beyond the Market: The Future of Public Services. TNI/PSIRU.

Bolkestein, F. (2002), Nuclear Energy needed more than ever. Address to the Institute of Economic Affairs. 07.11.2002, SPEECH/02/543, London.

Bolognesi, T. (2018), *Modernization and Urban Water Governance – Organizational Change and Sustainability in Europe*. Palgrave Studies in Water Governance, Policy and Practice. Palgrave Macmillan, London.

Bönker, F., Libbe, J., Wollmann, H. (2016), *Remunicipalisation Revisited: Long-Term Trends in the Provision of Local Public Services in Germany*. In: Wollmann, H., Kopric, I., Marcou, G. (Hrsg.), *Public and Social Services in Europe – From Public and Municipal to Private Sector Provision*. The Governance and Public Management Series: 71-85.

Boschek, R. (2002), *European water infrastructures: Regulatory flux void of reference? The Cases of Germany, France, and England and Wales*. *Intereconomics* 37(3): 138-149.

Bovaird, A (2010), *Brief intellectual history of the PPP movement*. In: Hodge, G.A., Greve, C., Boardman, A.E. (Hrsg.), *International Handbook on Public-Private Partnerships*. Edward Elgar, 43-67.

Bowman, A., Ertürk, I., Folkman, P., Froud, J., Haslam, C., Johal, S., Leaver, A., Moran, M., Tsitsianis, N., Williams, K. (2015), *What a waste*. Manchester Capitalism Series, Manchester University Press.

Boxell, J. (2012), *Veolia aims to cut debt as operating profits fall 25%*. *Financial Times*, 08.11.2012.

Boyer, M., Garcia, S. (2008), [Régulation et mode de gestion: une étude économétrique sur les prix et la performance dans le secteur de l'eau potable](#). *CIRANO Working Papers* 2008s-25, CIRANO.

Braithwaite, J. (2008), *Regulatory Capitalism, How it works, Ideas for making it work better*. Edward Elgar, Cheltenham.

Branchenbild Wasserwirtschaft (2005), *Branchenbild der deutschen Wasserwirtschaft 2005*. Hrsg.: Arbeitsgemeinschaft Trinkwassertalsperren e.V. (ATT), Bundesverband der deutschen Gas- und Wasserwirtschaft (BGW), Deutscher Bund der verbandlichen Wasserwirtschaft e.V. (DBVW), Deutsche Vereinigung des Gas- und Wasserfaches e.V., Technisch-wissenschaftlicher Verein (DVGW), Deutsche Vereinigung für Wasserwirtschaft, Abwasser und Abfall e.V. (DWA), Verband kommunaler Unternehmen e.V. (VKU). wwgw Wirtschafts- und Verlagsgesellschaft Gas und Wasser mbH, Bonn.

Branchenbild Wasserwirtschaft (2008), *Branchenbild der deutschen Wasserwirtschaft 2008*. Hrsg.: Arbeitsgemeinschaft Trinkwassertalsperren e.V. (ATT), Bundesverband der deutschen Gas- und Wasserwirtschaft (BGW), Deutscher Bund der verbandlichen Wasserwirtschaft e.V. (DBVW), Deutsche Vereinigung des Gas- und Wasserfaches e.V., Technisch-wissenschaftlicher Verein (DVGW), Deutsche Vereinigung für Wasserwirtschaft, Abwasser und Abfall e.V. (DWA), Verband kommunaler Unternehmen e.V. (VKU). wwgw Wirtschafts- und Verlagsgesellschaft Gas und Wasser mbH, Bonn.

Branchenbild Wasserwirtschaft (2015), *Branchenbild der deutschen Wasserwirtschaft 2015*. Hrsg.: Arbeitsgemeinschaft Trinkwassertalsperren e.V. (ATT), Bundesverband der deutschen Gas- und Wasserwirtschaft (BGW), Deutscher Bund der verbandlichen Wasserwirtschaft e.V. (DBVW), Deutsche Vereinigung des Gas- und Wasserfaches e.V., Technisch-wissenschaftlicher Verein (DVGW), Deutsche Vereinigung für Wasserwirtschaft, Abwasser und Abfall e.V. (DWA), Verband kommunaler Unternehmen e.V. (VKU). wwgw Wirtschafts- und Verlagsgesellschaft Gas und Wasser mbH, Bonn.

Budds, J., McGrahan, G. (2003), *Are the debates on water privatization missing the point? Experiences from Africa, Asia and Latin America*. *Environment and Urbanization* 15(2): 87-114.

BUND (2016), *Wie CETA und TTIP das EU-Vorsorgeprinzip aushebeln und Umweltstandards gefährden*. Bund für Umwelt und Naturschutz Deutschland e. V., Berlin.

Bundesministerium für Gesundheit (2015), *Österreichischer Trinkwasserbericht 2011-2013 – Bericht der Bundesministerin für Gesundheit über die Qualität von Wasser für den menschlichen Gebrauch (Trinkwasser) zur Information der VerbraucherInnen*. Wien.

Candeias, M., Rilling, R., Weise, K. (2009), *Krise der Privatisierung. Rückkehr des Öffentlichen*. Dietz, Berlin.

Carpentier, A., Nauges, C., Reynaud, A., Thomas, A. (2006), Effets de la délégation sur le prix de l'eau potable en France: Une analyse à partir de la littérature sur les "effets de traitement". *Economie & prévision* 174(3): 1-19.

CEO (2011), Open letter to EU Commission on water privatization. 15.05.2011, Corporate Europe Observatory: https://corporateeurope.org/sites/default/files/letter_to_the_commission_on_water_privatization_conditionalities.pdf (02.08.2018).

CEO (2017), Corporate interests continue to dominate key expert groups. New rules, little progress. Corporate Europe Observatory: <https://corporateeurope.org/expert-groups/2017/02/corporate-interests-continue-dominate-key-expert-groups> (10.02.2018).

CEO (2018), JEFTA: An exclusive trade between EU negotiators and big business. Corporate Europe Observatory: <https://corporateeurope.org/international-trade/2018/05/jefta-exclusive-trade-between-eu-negotiators-and-big-business> (15.06.2018).

CEO (o.J.), Revolving Door Watch. Corporate Europe Observatory: <https://corporateeurope.org/revolving-door-watch> (02.06.2018).

Chong, E., Huet, F. (2010), Partenariats public-privé et investissements de fin de contrat: le cas de l'industrie de l'eau en France. *Louvain Economic Review* 76(4).

Chong, E., Huet, F., Saussier, S., Steiner, F. (2006), Public–Private Partnerships and Prices: Evidences from Water Distribution in France. *Review of Industrial Organization* 29: 149-69.

Chong, E., Saussier, S., Silverman, B. (2015), Water under the bridge: Determinants of franchise renewal in water provision. *The Journal of Law, Economics and Organization* 31, Supplement 1: <http://dx.doi.org/10.1093/jleo/ewv010>

CIEAU (2018), Baromètre annuel d'opinion 2017. Le Centre d'information sur l'eau: <https://www.cieau.com/observatoire-de-leau/barometre-annuel-dopinion-2017/> (27.02.2018).

Claar, S., Nölke, A. (2012), Tiefe Integration: Konzeptuelle Grundlagen. *Journal für Entwicklungspolitik* 28(2): 8-27.

Clifton, J. (2014), Beyond Hollowing Out: Straitjacketing the State. *Political Quarterly* 85(4): 437-444.

Clifton, J., Díaz-Fuentes, D. (2010), Evaluating EU Policies on Public Services: A Citizens' Perspective. *Annals of Public and Cooperative Economics* 81(2): 281-311.

Clifton, J., Díaz-Fuentes, D. (2013), The European Union's concessions directive: A critical reading. *Intereconomics* 48(3): 139-144.

Commissariat General au Developpement Durable (2010), Services d'eau et d'assainissement: Une inflexion des tendances? No. 67 (Dezember): <http://www.developpement-durable.gouv.fr/spip.php?article19805> (23.05.2015).

Council of the European Union (2018a), Negotiating directives for a Free Trade Agreement with Australia. 7663/18 ADD 1 DCL 1, 25.06.2018: <https://www.consilium.europa.eu/media/35794/st07663-ad01dc01-en18.pdf> (04.08.2018).

Council of the European Union (2018b), Negotiating directives for a Free Trade Agreement with New Zealand. 7661/18 ADD 1 DCL 1, 25.06.2018: <https://www.consilium.europa.eu/media/35796/st07661-ad01dc01-en18.pdf> (04.08.2018).

- Cumbers, A. (2014), *Renewing Public Ownership: Constructing a Democratic Economy in the Twenty-First Century*. Class Centre for Labour and Social Studies, London.
- Da Cruz, N.F., Marques, R.C., Romano, G., Guerrini, A. (2012), Measuring the efficiency of water utilities a cross-national comparison between Portugal and Italy. *Water Policy* 14(5): 841-853.
- Danube Water Program (2015b), *Water and Wastewater Services in the Danube Region – Hungary Country Note*: <http://www.danube-water-program.org/> (17.08.2017).
- Deckwirth, C. (2004), Das GATS als politisches Projekt. *Z. Zeitschrift für marxistische Erneuerung* 59, September 2004: <http://www.zeitschrift-marxistische-erneuerung.de/article/906.das-gats-als-politisches-projekt.html> (02.02.2018).
- Deckwirth, C. (2008a), Sonderfall oder Hoffnungsträger? Die Privatisierung der Wasserversorgung in der Europäischen Union im Kontext der wettbewerblichen Reorganisation der öffentlichen Infrastrukturdienstleistungen. In: *Wasserkolloquium* (Hrsg.), *Wasser. Die Kommerzialisierung eines öffentlichen Gutes*. Dietz, Berlin: 102-119.
- Deckwirth, C. (2008b), Die Europäische Union als Triebkraft der Privatisierung. *WSI Mitteilungen* 10/2008: 534-540.
- Deckwirth, C. (2010), *Vom Binnenmarkt zum Weltmarkt: Die Liberalisierung und Globalisierung des europäischen Dienstleistungssektors*. Westfälisches Dampfboot, Münster.
- DEFRA (2010), *River Water Quality Indicator for Sustainable Development – 2009 Annual Results*. Department for Environment, Food and Rural Affairs. National Statistics.
- DEFRA (2012), *Waste water treatment in the United Kingdom – 2012, Implementation of the European Union Urban Waste Water Treatment Directive*. 91/271/EEC, London.
- DEFRA (2017), *Water abstraction from non-tidal surface water and groundwater*: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/644970/Water_Abstraction_from_non-tidal_surface_water_and_groundwater_2015v3.pdf (23.11.2017).
- Deinlein, W. (2014), *Kompodium Trinkwasser. Zur Europäischen Bürgerinitiative Right2Water und der EU-Konzessionsrichtlinie*. Stadtwerke Karlsruhe, Karlsruhe.
- Deinlein, W. (2017), Der Erfolg einer Kommune. Die Wasserwerke Karlsruhe sicherten gemeinsam mit einer EU-Bürgerinitiative die Wasserversorgung vor der Privatisierung. In: *Falter* 3a/2017: 35.
- Deinlein, W. (2018), Schlüssel zu dauerhaft fairem Handel: Erhalt und Ausbau der Daseinsvorsorge. *Politische Ökologie* 153: 102-107.
- DESTATIS (2015a), *Umwelt – Öffentliche Wasserversorgung und öffentliche Abwasserentsorgung 2013*. Statistisches Bundesamt, Wiesbaden.
- DESTATIS (2015b), *Abwasser und Klärschlamm in Deutschland – statistische Betrachtungen*. DWA-Arbeitsgruppe KEK-1.2 Statistik, Fachbeiträge 1106 Kreislaufwirtschaft/Energie/Klärschlamm.
- DESTATIS (2016), *Statistisches Jahrbuch – Deutschland und Internationales 2016*. Statistisches Bundesamt, Wiesbaden.
- DESTATIS (2016) *Öffentliche Wasserversorgung und öffentliche Abwasserentsorgung - Öffentliche Wasserversorgung*, Fachserie 19, Reihe 2.1., Statistisches Bundesamt, Wiesbaden.
- DESTATIS (2017), *Beschäftigung, Umsatz, Investitionen und Kostenstruktur der Unternehmen in der Energieversorgung, Wasserversorgung, Abwasser und Abfallentsorgung, Beseitigung von Umweltverschmutzungen*. Fachserie 4, Reihe 6.1.

Deutscher Bundestag (2013), Antwort der Bundesregierung auf die Kleine Anfrage der Abgeordneten Britta Haßelmann, Beate Walter-Rosenheimer, Markus Kurth, weiterer Abgeordneter und der Fraktion BÜNDNIS 90/DIE GRÜNEN – Drucksache 17/12494: Wirkungen der aktuellen EU-Vergaberechtsreform auf die Trinkwasserversorgung und kommunale Daseinsvorsorge sowie die Rolle der Bundesregierung auf Europäischer Ebene, 27.03.2013: <http://dip21.bundestag.de/dip21/btd/17/129/1712944.pdf> (03.08.2018).

Discover Water (2018), Customer experience ratings: <https://discoverwater.co.uk/customer-experience-rating> (27.02.2018).

DWI (2017a), Drinking Water 2016 – Summary of the Chief Inspector's report for drinking water in England. Drinking Water Inspectorate, London.

DWI (2017b), Drinking Water 2016 – Summary of the Chief Inspector's report for drinking water in Wales. Drinking Water Inspectorate, London.

Eaufrance (2017) Observatoire des services publics d'eau et d'assainissement Impacts des procédures de mise en concurrence dites « loi Sapin » sur les services d'eau et d'assainissement en 2014, Eaufrance, Service public d'information sur l'eau.

EBC – European Benchmarking Co-operation (2016), Learning from International Best Practices – 2016 Water & Wastewater Benchmark: <https://www.waterbenchmark.org/documents/Public-documents> (23.10.2017).

Eberhardt, P., Olivet, C. (2014), Profiting from Crisis. How corporations and lawyers are scavenging profits from Europe's crisis countries. CEO/TNI, Brüssel/Amsterdam.

Economist (2018), Carillion's collapse raises awkward questions about contracting out. Print Edition, 18.01.2018: 8.

EEA (2010), Waterbase – UWWTD: Urban Waste Water Treatment Directive – reported data. European Environment Agency: <https://www.eea.europa.eu/data-and-maps/data/waterbase-uwwtd-urban-waste-water-treatment-directive-4> (03.08.2017).

EEA (2013), Assessment of cost recovery through water pricing. European Environment Agency.

EEA (2015a), Emission intensity of the domestic sector in Europe, European Environment Agency, <https://www.eea.europa.eu/data-and-maps/indicators/emission-intensity-of-domestic-sector/assessment> (03.08.2017).

EEA (2015b), Phosphorus emission intensity of domestic sector, European Environment Agency, https://www.eea.europa.eu/data-and-maps/daviz/phosphorus-emission-intensity-of-domestic-sector#tab-chart_1 (03.08.2017).

Eichenbaum, M., Rebelo, S., de Resende, C. (2016) The Portuguese Crisis and the IMF, IEO Background Paper, Independent Evaluation Office, Washington, D.C.

Environment Agency (2008), Water resources in England and Wales – current state and future pressures. Environment Agency, Bristol.

Epstein, G. (2005), Financialization and the World Economy. Edward Elgar Publishing, Cheltenham.

EPSU (2014), Portuguese Court of Auditors uncovers profiteering in the water sector. European Public Service Union: <https://www.epsu.org/article/portuguese-court-auditors-uncovers-profiteering-water-sector> (18.04.2018).

EPSU (2018a), Recast Drinking Water Directive step forward but misses the opportunity to recognize Human Right to Water: <https://www.epsu.org/article/recast-drinking-water-directive-step-forward-misses-opportunity-recognize-human-right-water> (10.05.2018).

EPSU (2018b), New study demands Commission to support institutional environment for Human Right to Water – and to avoid threats to it: <https://www.epsu.org/article/new-study-demands-commission-support-institutional-environment-human-right-water> (10.08.2018).

ERSAR (2011), Annual Report on Water and Waste Services in Portugal. The Water and Waste Services Regulation Authority, Lissabon.

ERSAR (2013), Annual Report on Water and Waste Services in Portugal. The Water and Waste Services Regulation Authority, Lissabon.

ERSAR (2015), Annual Report on Water and Waste Services in Portugal. The Water and Waste Services Regulation Authority, Lissabon.

ERSAR (2016), Annual Report on Water and Waste Services in Portugal. The Water and Waste Services Regulation Authority, Lissabon.

ERSAR (2018), Annual Report on Water and Waste Services in Portugal. The Water and Waste Services Regulation Authority, Lissabon.

EuGH (1999), Rs C-107/98, Teckal, 18.11.1999.

EuGH (2003), Rs C-280/00, Altmark Trans, 24.07.2003.

EuGH (2005a), Rs C-26/03, Stadt Halle, 11.01.2005.

EuGH (2005b), Rs C-458/03, Parking Brixen, 13.10.2005.

EuGH (2018a), Rs C-284/16 Slowakische Republik/Achmea, 06.03.2018.

EuGH (2018b), Urteil in der Rechtssache C-284/16 Slowakische Republik/Achmea BV, Pressemitteilung Nr. 26/18: <https://curia.europa.eu/jcms/upload/docs/application/pdf/2018-03/cp180026de.pdf> (30.05.2018).

EurEau (1997), Management systems of drinking water production and distribution services in the EU member states 1996. European Federation of National Associations of Water Services, Brussels.

EurEau (2009), EUREAU Statistics Overview on Water and Wastewater in Europe 2008 – Country Profiles and European Statistics. Brussels.

EurEau (2017), Europe's water in figures – An overview of the European drinking water and waste water sectors 2017 edition. The European Federation of National Associations of Water Services. Brussels, Belgium.

Europäische Kommission (2000a), Mitteilung der Europäischen Kommission an den Rat und an das Europäische Parlament – Eine Binnenmarktstrategie für den Dienstleistungssektor. Brüssel 29.12.2000 /* KOM/2000/0888 endg. */ <http://eur-lex.europa.eu/legal-content/DE/ALL/?uri=CELEX:52000DC0888> (03.08.2018).

Europäische Kommission (2000b), Mitteilung der Kommission – Leistungen der Daseinsvorsorge in Europa. /* KOM/2000/0580 endg. */ 20.09.2000, Brüssel: <https://eur-lex.europa.eu/legal-content/DE/ALL/?uri=celex:52000DC0580> (03.08.2018).

Europäische Kommission (2001), Bericht für den Europäischen Rat in Laeken - Leistungen der Daseinsvorsorge /* KOM/2001/0598 endg. */ <http://eur-lex.europa.eu/legal-content/DE/TXT/?uri=CELEX:52001DC0598> (03.08.2018).

Europäische Kommission (2003a), Mitteilung der Kommission an den Rat, das Europäische Parlament, den Europäischen Wirtschafts- und Sozialausschuss und den Ausschuss der Regionen – Binnenmarktstrategie – Vorrangige Aufgaben 2003-2006 /* KOM/2003/0238 endg. */ <http://eur-lex.europa.eu/legal-content/DE/ALL/?uri=celex%3A52003DC0238> (03.08.2018).

Europäische Kommission (2003b), Grünbuch zu Dienstleistungen von allgemeinem Interesse /* KOM/2003/0270 endg. */ <http://eur-lex.europa.eu/legal-content/DE/TXT/?uri=celex:52003DC0270> (03.08.2018).

Europäische Kommission (2004a), Mitteilung der Kommission an das Europäische Parlament, den Rat, den Europäischen Wirtschafts- und Sozialausschuss und den Ausschuss der Regionen – Weißbuch zu Dienstleistungen von allgemeinem Interesse /* KOM/2004/0374 endg. */ <http://eur-lex.europa.eu/legal-content/DE/TXT/?uri=LEGISSUM%3A123013b> (03.08.2018).

Europäische Kommission (2004b), Vorschlag für eine Richtlinie des Europäischen Parlaments und des Rates über Dienstleistungen im Binnenmarkt [SEK(2004) 21]. Brüssel, 25.02.2004, KOM(2004) 2 endgültig/2, 2004/0001 (COD): <https://eur-lex.europa.eu/legal-content/DE/TXT/?uri=CELEX%3A52004PC0002> (03.08.2018).

Europäische Kommission (2007): Mitteilung der Kommission an das Europäische Parlament, den Rat, den Europäischen Wirtschafts- und Sozialausschuss und den Ausschuss der Regionen – Ein Binnenmarkt für das Europa des 21. Jahrhunderts. /* KOM/2007/0724 endg. */, Brüssel, 20.11.2007. <https://eur-lex.europa.eu/legal-content/DE/TXT/?uri=celex%3A52007DC0724> (03.08.2018).

Europäische Kommission (2009), 5th Commission Summary of the Implementation of the Urban Waste Water Treatment Directive. European Commission, SEC(2009) 1114 final, Brussels.

Europäische Kommission (2011a), Commission staff working document impact assessment of an initiative on concessions, /* SEC/2011/1588 final */, Brüssel, 20.12.2011: <http://eur-lex.europa.eu/legal-content/DE/TXT/?uri=CELEX%3A52011SC1588> (03.08.2018).

Europäische Kommission (2011b), Vorschlag für Richtlinie des Europäischen Parlaments und des Rates über die Konzessionsvergabe, /* KOM/2011/0897 endg., 2011/0437 (COD) */ , 20.12.2011: <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0897:FIN:DE:PDF> (03.08.2018).

Europäische Kommission (2012a), Mitteilung der Kommission über die Anwendung der Beihilfevorschriften der Europäischen Union auf Ausgleichsleistungen für die Erbringung von Dienstleistungen von allgemeinem wirtschaftlichem Interesse, 2012/C 8/02, C 8/4, 11.01.2012: <https://eur-lex.europa.eu/legal-content/DE/TXT/?uri=CELEX%3A52012XC0111%2802%29> (03.08.2018).

Europäische Kommission (2012b), Commission Staff Working Dokument. Member State: Hungary. Report from the Commission to the European Parliament and the Council on the Implementation of the Water Framework Directive (2000/60/EC) River Basin Management Plans: http://ec.europa.eu/environment/water/water-framework/pdf/3rd_report/CWD-2012-379_EN-Vol3_HU.pdf (11.09.2017).

Europäische Kommission (2013a), Bericht der Kommission an den Rat und das europäische Parlament über die Umsetzung der Richtlinie 91/676/EWG des Rates zum Schutz der Gewässer vor Verunreinigung durch Nitrat aus landwirtschaftlichen Quellen auf der Grundlage der Berichte der Mitgliedstaaten für den Zeitraum 2008-2011: <http://eur-lex.europa.eu/legal-content/DE/TXT/PDF/?uri=CELEX:52013DC0683&from=EN> (02.03.2018).

Europäische Kommission (2013b), Leitfaden zur Anwendung der Vorschriften der Europäischen Union über staatliche Beihilfen, öffentliche Aufträge und den Binnenmarkt auf Dienstleistungen von

allgemeinem wirtschaftlichem Interesse und insbesondere auf Sozialdienstleistungen von allgemeinem Interesse. Brüssel, 29.04.2013 SWD(2013) 53 final/2: http://ec.europa.eu/competition/state_aid/overview/new_guide_eu_rules_procurement_de.pdf (03.08.2018).

Europäische Kommission (2014), Bericht der Kommission – Synthesebericht zur Qualität des Trinkwassers in der Union auf der Grundlage der Prüfung der Berichte der Mitgliedstaaten für den Zeitraum 2008-2010 gemäß Richtlinie 98/83/EG. COM(2014) 363 final, Brüssel.

Europäische Kommission (2015a), Assessment of Member States' progress in the implementation of Programmes of Measures during the first planning cycle of the Water Framework Directive – Member State Report: Austria (AT): http://ec.europa.eu/environment/water/water-framework/impl_reports.htm (22.09.2017).

Europäische Kommission (2015b), Assessment of Member States' progress in the implementation of Programmes of Measures during the first planning cycle of the Water Framework Directive – Member State Report: Germany (DE): http://ec.europa.eu/environment/water/water-framework/impl_reports.htm (22.09.2017).

Europäische Kommission (2015c), Assessment of Member States' progress in the implementation of Programmes of Measures during the first planning cycle of the Water Framework Directive – Member State Report: France (FR): http://ec.europa.eu/environment/water/water-framework/impl_reports.htm (22.09.2017).

Europäische Kommission (2015d), Assessment of Member States' progress in the implementation of Programmes of Measures during the first planning cycle of the Water Framework Directive – Member State Report: United Kingdom (UK): http://ec.europa.eu/environment/water/water-framework/impl_reports.htm (22.09.2017).

Europäische Kommission (2015e), Assessment of Member States' progress in the implementation of Programmes of Measures during the first planning cycle of the Water Framework Directive – Member State Report: Hungary (HU): http://ec.europa.eu/environment/water/water-framework/impl_reports.htm (22.09.2017).

Europäische Kommission (2015f), Assessment of Member States' progress in the implementation of Programmes of Measures during the first planning cycle of the Water Framework Directive – Member State Report: Portugal (PT): http://ec.europa.eu/environment/water/water-framework/impl_reports.htm (22.09.2017).

Europäische Kommission (2016a), Bericht der Kommission an das Europäische Parlament, den Rat, den Europäischen Wirtschafts- und Sozialausschuss und den Ausschuss der Regionen – Achter Bericht über den Stand des Vollzugs und die Vollzugsprogramme (gemäß Artikel 17) der Richtlinie 91/271/EWG des Rates über die Behandlung von kommunalem Abwasser.

Europäische Kommission (2016b), CETA – Zusammenfassung der abschließenden Verhandlungsergebnisse. Februar 2016: http://trade.ec.europa.eu/doclib/docs/2015/february/tradoc_153081.pdf (03.08.2018).

Europäische Kommission (2016c) Evaluation: Data for Research, DG Regional Policy, http://ec.europa.eu/regional_policy/en/policy/evaluations/data-for-research/ (03.08.2018).

Europäische Kommission (2017), Wasser in angemessener Güte in Europa (Gewässerschutz-Richtlinie): <http://eur-lex.europa.eu/legal-content/DE/TXT/HTML/?uri=LEGISSUM:l28002b&from=DE> (22.09.2017).

Europäische Kommission (o.J.), Wissenswertes zu Expertengruppen: <http://ec.europa.eu/transparency/regexpert/index.cfm?do=faq.faq&aide=2&Lang=DE> (03.08.2018).

Europäisches Parlament (2001), Entschließung des Europäischen Parlaments zu der Mitteilung der Kommission „Leistungen der Daseinsvorsorge in Europa“ (KOM(2000) 580 + C5-0399/2001 + 2001/2157(COS)), 13.11.2001. ABl 2002, C 140°/153, 13.06.2002: <http://eur-lex.europa.eu/legal-content/DE/ALL/?uri=OJ:C:2002:140E:TOC> (03.08.2018).

Europäisches Parlament (2004), Entschließung des Europäischen Parlaments zu der Mitteilung der Kommission: Binnenmarktstrategie – Vorrangige Aufgaben 2003-2006, KOM(2003) 238, C5-0379/2003, 2003/2149(INI), P5_TA(2004)0183: <http://eur-lex.europa.eu/legal-content/DE/TXT/?uri=uriserv:OJ.CE.2004.102.01.0645.01.DEU&toc=OJ:C:2004:102E:TOC#CE2004102DE.01085701> (03.08.2018).

Europäisches Parlament (2010), Bericht über neue Entwicklungen im öffentlichen Auftragswesen, 10.05.2010, 2009/2175(INI), PE 438.513v02-00, A7-0151/2010. Ausschuss für Binnenmarkt und Verbraucherschutz, Berichterstatterin Heide Rühle: <http://www.europarl.europa.eu/sides/getDoc.do?type=REPORT&reference=A7-2010-0151&language=DE> (08.01.2018).

Europäisches Parlament (2017), Öffentliches Auftragswesen: http://www.europarl.europa.eu/atyourservice/de/displayFtu.html?ftuld=FTU_2.1.10.html (08.01.2018).

Europäisches Parlament/Europäischer Rat (2006), Richtlinie 2006/123/EG des Europäischen Parlaments und des Rates über Dienstleistungen im Binnenmarkt, 12.12.2006, ABl. L 376/36: <https://eur-lex.europa.eu/legal-content/DE/ALL/?uri=celex:32006L0123> (02.06.2018).

Europäisches Parlament/Europäischer Rat (2014a), Richtlinie 2014/23/EU des Europäischen Parlaments und des Rates über die Konzessionsvergabe, 26.2.2014, ABl. L 94/1: <https://eur-lex.europa.eu/legal-content/DE/TXT/?uri=CELEX%3A32014L0023> (03.08.2018).

Europäisches Parlament/Europäischer Rat (2014b), Richtlinie 2014/24/EU des Europäischen Parlaments und des Rates über die öffentliche Auftragsvergabe und zur Aufhebung der Richtlinie 2004/18/EG, 26.2.2014, ABl. L 94/65: <https://eur-lex.europa.eu/legal-content/DE/TXT/PDF/?uri=CELEX:32014L0024&from=DE> (02.06.2018).

Europäisches Parlament/Europäischer Rat (2014c), Richtlinie 2014/25/EU des Europäischen Parlaments und des Rates über die Vergabe von Aufträgen durch Auftraggeber im Bereich der Wasser-, Energie- und Verkehrsversorgung sowie der Postdienste und zur Aufhebung der Richtlinie 2004/17/EG, 26.2.2014, ABl. L 94/243: <https://eur-lex.europa.eu/legal-content/DE/TXT/?uri=CELEX%3A32014L0025> (02.06.2018).

Europäische Union (2017), Umfassendes Wirtschafts- und Handelsabkommen (CETA) zwischen Kanada einerseits und der Europäischen Union und ihren Mitgliedstaaten andererseits. ABl. L 11/23, 14.01.2017: https://eur-lex.europa.eu/legal-content/DE/ALL/?uri=uriserv:OJ.L_2017.011.01.0023.01.DEU (03.08.2018).

European Topic Centre (2016a), Overview of the drinking water quality in Austria – Results of the reporting 2011-2013 under the Drinking Water Directive 98/83/EC: http://ec.europa.eu/environment/water/water-drink/reporting_en.html (20.09.2017).

European Topic Centre (2016b), Overview of the drinking water quality in Germany – Results of the reporting 2011-2013 under the Drinking Water Directive 98/83/EC: http://ec.europa.eu/environment/water/water-drink/reporting_en.html (20.09.2017).

European Topic Centre (2016c), Overview of the drinking water quality in France – Results of the reporting 2011-2013 under the Drinking Water Directive 98/83/EC: http://ec.europa.eu/environment/water/water-drink/reporting_en.html (20.09.2017).

European Topic Centre (2016d), Overview of the drinking water quality in United Kingdom – Results of the reporting 2011-2013 under the Drinking Water Directive 98/83/EC: http://ec.europa.eu/environment/water/water-drink/reporting_en.html (20.09.2017).

European Topic Centre (2016e), Overview of the drinking water quality in Hungary – Results of the reporting 2011-2013 under the Drinking Water Directive 98/83/EC: http://ec.europa.eu/environment/water/water-drink/reporting_en.html (20.09.2017).

European Topic Centre (2016f), Overview of the drinking water quality in Portugal – Results of the reporting 2011-2013 under the Drinking Water Directive 98/83/EC: http://ec.europa.eu/environment/water/water-drink/reporting_en.html (20.09.2017).

EUROSTAT (2016), Urban Europe – Statistics on Cities, Towns and Suburbs, 2016 edition. Statistical Books Eurostat: <http://dx.doi.org/10.2785/91120>.

EUROSTAT (2017a), Area by NUTS 3 region [demo_r_d3area]: <http://appsso.eurostat.ec.europa.eu/nui/show.do> (05.09.2017).

EUROSTAT (2017b), Bevölkerung am 1. Januar: <http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&plugin=1&pcode=tps00001&language=de> (03.08.2017).

EUROSTAT (2017c), Stadt/Land Typologie: <http://ec.europa.eu/eurostat/web/rural-development/methodology> (11.09.2017).

EUROSTAT (2017d), Fläche der Regionen nach der Typologie städtischer/ländlicher Räume [urt_d3area]: <http://ec.europa.eu/eurostat/data/database> (20.06.2017).

EUROSTAT (2017e), Bevölkerung am 1. Januar nach fünfjährigen Altersgruppen, Geschlecht und Typologie städtischer/ländlicher Räume [urt_pjangrp3]: <http://ec.europa.eu/eurostat/data/database> (20.06.2017).

EUROSTAT (2017f), Überblick über die Bodenbedeckung [lan_lcv_oww]: <http://ec.europa.eu/eurostat/data/database> (03.08.2017).

EUROSTAT (2017g), Wasserstatistik: http://ec.europa.eu/eurostat/statistics-explained/index.php/Water_statistics/de (11.09.2017).

EUROSTAT (2017h), Erneuerbare Süßwasser-Ressourcen [env_wat_res]: <http://ec.europa.eu/eurostat/data/database> (20.06.2017).

EUROSTAT (2017i), Annual freshwater abstraction by source and sector [env_wat_abs]: <http://ec.europa.eu/eurostat/data/database> (25.07.2017).

EUROSTAT (2017j), An die öffentliche Wasserversorgung angeschlossene Bevölkerung [env_wat_pop]: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=env_wat_pop&lang=de (23.11.2017).

EUROSTAT (2017k), Anschlussgrad der Bevölkerung an Kläranlagen [env_ww_con]: <http://ec.europa.eu/eurostat/data/database> (20.07.2017).

EUROSTAT (2017l), Aufkommen und Einleitung von Abwasser nach Volumen [env_ww_genv]: <http://ec.europa.eu/eurostat/data/database> (11.07.2017).

EUROSTAT (2017m), Kläranlagen nach Behandlungsniveau [env_ww_plt]: <http://ec.europa.eu/eurostat/data/database> (03.08.2017).

EUROSTAT (2017n), Behandlungskapazität von Abwasseraufbereitungsanlagen, in Bezug auf den BOD5 [env_ww_cap]: <http://ec.europa.eu/eurostat/data/database> (20.07.2017).

EUROSTAT (2017o), Klärschlammproduktion und -Beseitigung [env_ww_spd]: <http://ec.europa.eu/eurostat/data/database> (20.07.2017).

EUROSTAT (2017p), HVPI, Jährliche Daten (Durchschnittsindex und Veränderungsrate) [prc_hicp_aind]

EUROSTAT (2018a), Annual detailed enterprise statistics for industry [sbs_na_ind_r2]: <http://ec.europa.eu/eurostat/data/database> (21.04.2018).

EUROSTAT (2018b), General government expenditure by function (COFOG) [gov_10a_exp]: <http://ec.europa.eu/eurostat/data/database> (21.04.2018).

EUROSTAT (2018c), SBS data by NUTS 2 regions and NACE Rev. 2, [sbs_r_nuts06_r2]: <http://ec.europa.eu/eurostat/data/database> (21.04.2018).

Ewers, H.-J., Mankel, B. (2001), Liberalisierung der Wasserversorgung: Soll das letzte Versorgungsmonopol in Deutschland fallen?. ifo Schnelldienst 54. Jg.14: 3-15.

Ewers, H.-J., Botzenhart, K., Jekel, M., Salzwedel, J., Kraemer, A.R. (2001), Optionen, Chancen und Rahmenbedingungen einer Marktöffnung für eine nachhaltige Wasserversorgung. BMWi-Forschungsvorhaben (11/00).

Ey, F., Wagner, A. (2015), Lobbying in Brüssel. Die Übermacht der Unternehmen brechen. Arbeiterkammer Wien.

Financial Times (2018), Returning the UK's privatised services to the public, Printausgabe, 26.02.2018.

Fink, P (2006), FDI-led growth and rising polarisations in Hungary: Quantity at the expense of quality. New Political Economy 11(1): 47-72. <http://dx.doi.org/10.1080/13563460500494867>

Florio, M. (2013), Network Industries and Social Welfare: The Experiment that Reshuffled European Utilities. Oxford University Press, Oxford.

Florio, M. (2014), Contemporary public enterprises: innovation, accountability, governance. Journal of Economic Policy Reform 17(3): 201-208.

Food&Water Europe (2018), The European Commission once again disappoints citizens that supported the Initiative for the Right to Water, 31.01.2018: <https://www.foodandwatereurope.org/press-releases/european-water-movement-food-water-europe-wasser-in-burgerhand/> (10.05.2018).

Foods Standard Agency (2012), Food Law – Practice Guide (Wales): <https://www.food.gov.uk/sites/default/files/multimedia/pdfs/practiceguidancewales.pdf> (02.03.2018).

The Foundational Economy Collective (2018), Foundational Economy: The Infrastructure of Everyday Life. Manchester Capitalism Series, Manchester.

French, S., Leyshon, A., Wainwright, T. (2011), Financializing space, spacing financialization. Progress in Human Geography 35: 798-819.

Frenz, W. (2007), Handbuch Europarecht, Band 3, Beihilfe- und Vergaberecht. Springer, Berlin.

- Fritz, T. (2015a), Analyse und Bewertung des EU-Kanada Freihandelsabkommens CETA. Hans-Böckler-Stiftung, Berlin.
- Fritz, T. (2015b), Der stille Angriff auf öffentliche Dienstleistungen. Wie EU-Verhandler und Wirtschaftslobbyisten bei CETA und TTIP an einem Strang ziehen. AK Wien/AITEC/CEO/E-GÖD/IGO/TNI/War on Want, Amsterdam/Brüssel/London/Paris/Wien/Warschau.
- Fuchs, P. (2018), Konzernklagerechte in Handelsabkommen. Neue Kürzel für alte Inhalte. Politische Ökologie 153: 39-44.
- Gahrman, A., Mönnich, E., Moewes, M., Overman, S., Reinhardt, B., Wüst, T. (2012), Public Private Partnership: Organisationsvarianten für eine nachhaltigkeitsgerechte Entsorgung. Evaluierung von Fallbeispielen für die Praxis. LIT-Verlag, Berlin.
- Gee, A. (2004), Competition and the Water Sector. Competition Policy Newsletter 2/2004: 38-41. http://ec.europa.eu/competition/publications/cpn/2004_2_38.pdf (03.08.2018).
- Georgi, F., Kannankulam, J. (2012), Das Staatsprojekt Europa in der Krise. Die EU zwischen autoritärer Verhärtung und linken Alternativen. Rosa Luxemburg Stiftung, Brüssel.
- Goubert, J.P. (1986), The conquest of water. Polity Press, London.
- Griller, S., Obwexer, W., Vranes, E. (Hrsg.) (2017), Mega-Regional Trade Agreements: CETA, TTIP, and TiSA. New Orientations for EU External Economic Relations. Oxford University Press.
- Grossi, G., Marcou G., Reichard, C. (2010), Comparative aspects of institutional variants for local public service provision. In: Wollmann, H., Marcou, G. (Hrsg.), The Provision of Public Services in Europe: Between state, local government and market. Edward Elgar, Cheltenham: 217-239.
- Haar, K., Verheecke, L., Bank, M. (2016), Ein gefährliches regulatorisches Duett. Wie Bürokraten und Großunternehmen durch die transatlantische regulatorische Zusammenarbeit bei TTIP dem Gemeinwohl schaden könnten. Corporate Europe Observatory, Brüssel.
- Härlin, D., Berlin Wassertisch (2018): First Remunicipalization – then Democratization! An interim report on the democratization of Berlin's water management. Passerelle 18, 03/2018: 116-118.
- Hall, D. (2003a), A Critique of the EC Green Paper on Services of General Interest. PSIRU, London.
- Hall, D. (2003b), EC Internal market strategy – implications for water and other public services. PSIRU, London.
- Hall, D. (2006), Corporate Actors: A Global Review of Multinational Corporations in the Water and Electricity Sectors. Public Services Yearbook. PSIRU, London.
- Hall, D. (2015a), Services of General Interest Under Regimes of Fiscal Austerity. In: Krajewski, M. (Hrsg.), Services of General Interest Beyond the Single Market. Springer, Berlin: 189-215.
- Hall, D. (2015b), Why public-private partnerships don't work: The many advantages of the public alternative. PSIRU, London.
- Hall, D., Lobina, E. (1999), Water and privatisation in central and eastern Europe, PSIRU Report, University of Greenwich.
- Hall, D., Lobina, E. (2006), Pipe dreams. The failure of the private sector to invest in water services in developing countries. PSIRU/Ferney-Voltaire:PSI/London: WDM, London.
- Hall, D., Lobina, E. (2007), International Actors and Multinational Water Company Strategies in Europe, 1990-2003. Utilities Policy 15: 64-77.

- Hall, D., Lobina, E. (2012a), The birth, growth and decline of multinational water companies., In: Katko, T., Juuti, P.S., Schwartz, K. (Hrsg.), *Water Services Management and Governance: Lessons for a Sustainable Future. Governance and Management for Sustainable Water Systems Series*. IWA Publishing, London: 123-132.
- Hall, D., Lobina, E. (2012b), *Water companies and trends in Europe 2012*. PSIRU Report, August 2012, PSIRU, London.
- Hall, D., Lobina, E. (2016), *Financing water and sanitation: public realities*. PRIRU, London.
- Hall, D., Lobina, E., De La Motte, R. (2003), *Water privatisation and restructuring in Central and Eastern Europe and NIS countries*. PSIRU, London.
- Hall, David/Lobina, Emanuele/Corral, Violeta/Hoedeman, Olivier/Terhorst, Philip/Pigeon, Martin/Kishimoto, Satoko (2009), *Public-public partnerships (PUPs) in water*. PSIRU, London.
- Hall, D., Lobina, E., Terhorst, P. (2013), Remunicipalisation in the early 21st century. *International Review of Applied Economics* 27(2): 193-214.
- Hallström, J. (2002), *Constructing a Pipe-Bound City – A history of Water Supply, Sewerage and Excreta Removal in Norrköping and Linköping, Sweden, 1860-1910*. Department of Water and Environmental Studies, Linköping University.
- Halmer, S., Hauenschild, B. (2014), *Rekommunalisierung öffentlicher Dienstleistungen in der EU. ÖGPP Österreichische Gesellschaft für Politikberatung und Politikentwicklung*, Wien.
- Hanemann, M. (2005), The economic conception of water. In: Rogers, P.P., Llamas, M.R., Cortina, L.M. (Hrsg.), *Water Crisis: Myth or Reality?* CRC Press, Boca Raton, Florida: 61-91.
- Haslinger, M. (2013), *Umgehungsphänomene im Spiegel der Judikatur der österreichischen Gerichtshöfe öffentlichen Rechts*. Holzhausen, Wien.
- Hassan, J.A. (1985), The Growth and Impact of the British Water Industry in the Nineteenth Century. *The Economic History Review* 38(4), 531-547.
- Hecht, C. (2015), German municipalities take back control of water. In: Kishimoto, S., Lobina, E., Petitjean, O. (Hrsg.), *Our Public Water Future: The Global Experience with Remunicipalisation*. TNI, Amsterdam: 50-57.
- Hegedüs, J., Papp, M. (2007), *Impact of decentralization on public service provision (Case of water sector)*. Metropolitan Research Institute, Budapest.
- Heller, H. (2016), *Wasserkonzessionen nach der Vergaberechtsreform*. EWeRK 3/2016: 210-214.
- Helm, D., Tindall, T. (2009), The evolution of infrastructure and utility ownership and its implications. *Oxford Review of Economic Policy* 25(3): 411-434.
- Hermann, C. und Flecker, J. (Hrsg.) (2012), *Privatization of Public Services: Impacts for Employment, Working Conditions, and Service Quality in Europe*. Routledge, New York.
- Herten-Koch, R. (2013), *Die Vergabe von Wasserkonzessionen*. EWeRK 5/2013: 248-251.
- Hesse, M., Redlich, M., Rottmann, O., Starke, T. (2016), *Private Unternehmensbeteiligung als Preistreiber? Eine empirische Vergleichsanalyse am Beispiel der deutschen Trinkwasserversorgung*. ZöGU Beiheft 48/2016.

- Höpner, M., Petring, A., Seikel, D., Werner, B. (2011), Liberalisierungspolitik: Eine Bestandsaufnahme des Rückbaus wirtschafts- und sozialpolitischer Interventionen in entwickelten Industrieländern. *Kölner Zeitschrift für Soziologie und Sozialpsychologie*, 63(1): 1-32. <http://dx.doi.org/10.1007/s11577-010-0125-y>
- Horvath, T.M. (2016), From Municipalisation to Centralism: Changes to Local Public Service Delivery in Hungary. Wollmann H., Koprić I., Marcou G. (eds) *Public and Social Services in Europe. Governance and Public Management*. Palgrave Macmillan, London: 185-199.
- Hüesker, F. (2011), Auswirkungen von Privatisierungen auf die Gemeinwohlfähigkeit des Daseinsvorsorgestaates – untersucht am Fall der Wasserbetriebe des Landes Berlin. Oekom, München.
- IFDR (2013) Database on EU-funding, Instituto Financeiro para o Desenvolvimento Regional,
- IFEN (2007), L'économie de l'environnement en 2005, Rapport de la Commission des comptes et de l'économie de l'environnement - Édition 2007, Paris.
- INSEE (2016), Tableaux de l'économie française. Édition 2016. Institut national de la statistique et des études économiques. Paris.
- IWA – International Statistics für Water Services (2017), Water and Sanitation Services: <http://www.iwa-network.org/water-statistics/> (03.08.2017).
- IWA Water Balance (2018), IWA Best Practice Standard Water Balance: <http://www.leaks-suite.com/concepts/iwa-water-balance/> (02.03.2018).
- IWF (2014), Portugal: Fiscal Transparency Evaluation, Internationaler Währungsfonds, Washington, D.C.
- Jensen, P.H., Stonecash, R.E. (2005), Incentives and the efficiency of public-sector outsourcing contracts. *Journal of Economic Surveys* 19(5): 767-787.
- Jensen, O., Wu, X. (2017), Regulating government-owned water utilities. *Utilities Policy* 49: 1-5. <https://doi.org/10.1016/j.jup.2017.09.008>
- Juuti, P.S., Katko, T.S. (2005), Historical Development of Water and Sanitation Services. In: Juuti, P.S., Katko, T.S. (Hrsg.), *Water, Time and European Cities: history matters for the future*: 25-50.
- Kappeler, A., Nemoz, M. (2010), Public-Private Partnerships in Europe – Before and During the Recent Financial Crisis. *Economic and Financial Reports No 2010/4*, Economics Department, EIB.
- Kessides, I.N. (2004), *Reforming infrastructure: Privatization, regulation, and competition*. Weltbank, Oxford University Press, Washington (D.C.).
- Kegelmann, J. (2007), *New Public Management - Möglichkeiten und Grenzen des Neuen Steuerungsmodells*. VS Verlag für Sozialwissenschaften, Wiesbaden.
- Kishimoto, S., Petitjean, O. (Hrsg.) (2017), *Reclaiming Public Services: How cities and citizens are turning back privatisation*. Amsterdam: Transnational Institute et al.
- Kishimoto, S. (2015), Trade agreements and investor protection: A global threat to public water. In: Kishimoto, S., Lobina, E., Petitjean, O. (Hrsg.), *Our public water future. The global experience with remunicipalisation*. TNI/PSIRU/Multinationals Observatory/MSP/EPUS, Amsterdam/London/Paris/Cape Town/Brussels: 96-111.
- Kiss, A., Ungvári, G. (2017), Hintergrundexpertise für den ungarischen Wasser-Sektor, Corvinus University of Budapest.

Klein, B. (2012), Kommunale Kooperationen zwischen innerstaatlichem Organisationsakt und Markt. Ein Beitrag zur Bestimmung der Reichweite des europäischen Vergaberechts dargelegt am Beispiel der Vergabekoordinierungsrichtlinie, des Vergabeprimärrechts und des deutschen Kartellvergaberechts. V&R Unipress/Universitätsverlag Osnabrück, Göttingen/Osnabrück.

Kletzan, D. (2004), Ökonomische Analyse der Wassernutzung gemäß Artikel 5 Wasserrahmenrichtlinie. Erstellung eines Berichtsentwurfes. Österreichisches Institut für Wirtschaftsforschung, Wien.

Kletzan-Slamanig, D., Sinabell, F., Pennerstorfer, D., Böhs, G., Schönhart, M., Schmid, E. (2014), Ökonomische Analyse 2013 auf der Grundlage der Wasserrahmenrichtlinie. WIFO Österreichisches Institut für Wirtschaftsforschung, Universität für Bodenkultur Wien, im Auftrag des Bundesministeriums für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft.

Krajewski, M. (2007), Leistungen der Daseinsvorsorge im Gemeinschaftsrecht. Freier Wettbewerb oder öffentliche Aufgabe? In: Wagner, A., Wedl, V. (Hrsg.) (2007), Bilanz und Perspektiven zum europäischen Recht: Eine Nachdenkschrift anlässlich 50 Jahre Römische Verträge. ÖGB Verlag, Wien: 433-453.

Krajewski, M. (2010a), Dienstleistungen von allgemeinem Interesse im Vertrag von Lissabon. Zögl 33(2): 75-96.

Krajewski, M. (2010b), Vom Primat des Wettbewerbs zum gemeinsamen Verfassungswert: Perspektivenwandel im europäischen Recht öffentlicher Dienstleistungen? In: Bundesverband Öffentliche Dienstleistungen (Hrsg.) (2010), Zukunft der öffentlichen Wirtschaft, Beiträge zur öffentlichen Wirtschaft. Band 31: 46-73.

Krajewski, M. (2011), Grundstrukturen des Rechts öffentlicher Dienstleistungen. Springer, Berlin.

Krajewski, M. (2014), GATS plus: Öffentliche Dienstleistungen in Freihandels- und Investitionsabkommen der Europäischen Union. In: Prausmüller, O., Wagner, A. (Hrsg.) (2014), Reclaim Public Services: Bilanz und Alternativen neoliberaler Privatisierungspolitik. VSA, Hamburg: 132-185.

Krajewski, M. (2016), Model clauses for the exclusion of public services from trade and investment agreements. Kammer für Arbeiter und Angestellte für Wien/European Federation of Public Service Unions, Wien.

Krajewski, M. (2018), Die Auswirkung des Achmea-Urteils des EuGH auf die EU-Investitionspolitik. Powershift, Berlin.

Krastev, I. (2017), Europadämmerung. Suhrkamp, Berlin.

Kregel, J., Matzner, E., Grabher, G. (1993), The Market Shock: An Agenda for Socio-Economic Reconstruction of Central and Eastern Europe. University of Michigan Press, Ann Arbor.

KSH (2015) Annual per capita expenditure by COICOP, income deciles, regions and type of settlements, http://www.ksh.hu/stadat_annual_2_2 (11.01.2018).

KSH (2016) Annual averages prices of selected goods and services, https://www.ksh.hu/stadat_annual_3_6 (11.01.2018).

Kühl, U. (Hrsg.) (2001), Der Munizipalsozialismus in Europa/Le socialisme municipal en Europe. Pariser Historische Studien 57.

Kunneke, R., Finger, M. (Hrsg.) (2011), International Handbook of Network Industries: The Liberalization of Infrastructures, Edward Elgar.

Kynast, B. (2015), The Impact of Free Trade Agreements on Local Self-government. The Provision of Drinking Water by Local Utilities in Germany as a Case Study. In: Krajewski, M. (Hrsg.) (2015), Services of General Interest Beyond the Single Market. Springer, Berlin: 351-370.

Laskowski, S.R. (2016), Rechtliches Gutachten zu möglichen Verstößen gegen Investitionsschutzregelungen des Freihandelsabkommens CETA durch Maßnahmen der kommunalen Wasserwirtschaft, ISDS-Schiedsgerichtsverfahren und Haftungsfragen. Gerichtet an die Fraktion Bündnis 90/Die Grünen im Deutschen Bundestag: https://www.gruene-bundestag.de/fileadmin/media/gruenebundestag_de/themen_az/EU-USA_Freihandelsabkommen/Laskowski_Gutachten_20_09_2016.pdf (03.08.2018).

Lauber, W. (2006), Privatisierung des Wassersektors in Europa: Reformbedarf oder Kapitalinteressen? AK Wien.

Lazonick, W., O'Sullivan, M. (2000), Maximizing shareholder value: a new ideology for corporate governance. *Economy and Society* 29: 13-35.

Le Lannier, A., Porcher, S. (2014), Efficiency in the public and private French water utilities: prospects for Benchmarking. *Applied Economics* 46(5): 556-572.

Leaver, A. (2017) Hintergrundexpertise für den englischen Wasser-Sektor, University of Manchester, Manchester.

Levi-Faur, D. (2005), The global diffusion of regulatory capitalism. *The Annals of the American Academy of Political and Social Sciences* 598: 12-32. <http://dx.doi.org/doi.org/10.1177/0002716204272371>.

Lieberherr, E., Fuenfschilling, L. (2016), Neoliberalism and sustainable urban water sectors: A critical reflection of sector characteristics and empirical evidence. *Environment and Planning C: Government and Policy* 34(8): 1540-1555.

Lieberherr, E., Truffer, B., Dominguez, D. (2016a), Innovation and public management: Comparing dynamic capabilities in two Swiss wastewater utilities. In: Finger, M., Jaag, C. (Hrsg.) (2016), *The Routledge Companion to Network Industries*. Routledge, Abingdon, Oxon (U.K.): 389-401.

Lieberherr, E., Viard, C., Herzberg, C. (2016b), Water Provision in France, Germany and Switzerland: Convergence and Divergence. In: Wollmann, H., Kopric, I., Marcou, G. (Hrsg.) (2016), *Public and Social Services in Europe*: 249-263.

Lobina, E. (2018), Commentary on the European Commission's "Study on Water Services in Selected Member States". PSIRU/EPSU, Greenwich/Brüssel.

Lundsgaard, J. (2002), Competition and Efficiency in Publicly Funded Services, *OECD Economic Studies* No. 35, 2002/2.

Lundy, D. (2017), Lobby Planet Brussels. Corporate Europe Observatory, Brüssel.

MA 27 (o.J. a), Argumentarium gegen die Liberalisierung des Wassersektors. Magistrat der Stadt Wien, MA 27 Europäische Angelegenheiten, Wien.

MA 27 (o.J. b), EU-Beihilfen kurz und bündig. Magistrat der Stadt Wien, MA 27 Europäische Angelegenheiten, Wien.

Madner, V. (2016), TTIP, CETA & Co: EU-Handelsabkommen einer neuen Generation und ihre Auswirkungen auf öffentliche Dienstleistungen. In: *Juridikum* 2/2016: 221-230.

Madner, V., Mayr, S., Damjanovic, D. (2015), Die Auswirkungen des Comprehensive Economic and Trade Agreement (CETA) auf die rechtlichen Rahmenbedingungen für Dienstleistungen der Daseinsvorsorge in Österreich. Arbeiterkammer Wien, Österreichischer Städtebund, Verband der öffentlichen Wirtschaft und Gemeinwirtschaft Österreichs, Wien.

Magdahl, J.E. (2012), From privatisation to corporatisation – Exploring the strategic shift in neoliberal policy on urban water services. FIVAS (The Association for International Water Studies), Oslo.

March, H., Purcell, T. (2014), The muddy waters of financialisation and new accumulation strategies in the global water industry: The case of AGBAR. Geoforum: <http://dx.doi.org/10.1016/j.geoforum.2014.01.011>

Marques, R.C. (2005), Regulação de Serviços Públicos [Public Services Regulation]. Edições Sílabo, Lisbon.

Marques, R.C. (2008), Comparing private and public performance of Portuguese water services. IWA Publishing 2008. Water Policy 10: 25-42.

Marques, R.C., Silva, D. (2008), As Parcerias público-privadas em Portugal. Lições e recomendações [Public-private partnership in Portugal: Lessons and recommendations]. Revista de Estudos Politécnicos 6(10): 33-50.

Marques, R.C. (2013), Regulation of Water and Wastewater Services: An International Comparison. IWA Publishing.

Marques, R.C. (2017), Análise do desempenho dos operadores privados e públicos no setor da Água em Portugal. AEPISA – Associação das Empresas Portuguesas para o Sector do Ambiente.

Massarutto, A. (2016), The evolving global water industry. In: Finger, M., Jaag, C. (Hrsg.) (2016), The Routledge Companion to Network Industries. Routledge, Abingdon, Oxon (U.K.): 122-137.

Matt, J.M. (2017), The Troubled Water of VEOLIA's Tax Management – Does Veolia use France and US as private tax havens?. A Report commissioned by the Greens, EFA Group in the European Parliament.

MaViz – Magyar Víziközmű Szövetség (2015), A magyar víziközmű ágazat bemutatása – átfogó tanulmány. 2. kiadás.

Maver, I. (2000), Glasgow, Town and City History Series, Edinburgh University Press.

Mazzucato, M. (2018), The Value of Everything. Making and Taking in the Global Economy, Penguin.

Mayr, S. (2016), Same but different? Öffentliche Dienstleistungen und das neue Investment Court System der EU. In: Juridikum 2/2016: 231-240.

McDonald, D.A. (2016a), To corporatize or not to corporatize (and if so, how?). Utilities Policy 40: 107-114

McKinsey Global Institute (2016), Bridging global infrastructure gaps. June 2016.

MEEM – Ministère de l'Environnement, de l'Énergie et de la Mer (2016), Repères – L'eau et les milieux aquatiques Chiffres clés – Édition 2016.

MEEM – Ministère de l'Environnement, de l'Énergie et de la Mer (2016), Eau potable et assainissement: à quel prix?. Rapport CGEDD n° 010151-01, IGA n°16006-15010-01.

Melosi, M.V. (2000), The Sanitary City. Urban Infrastructure in America from the Colonial Times to the Present. The John Hopkins University Press, Baltimore/London.

Ménard, C. (2009), Why to Reform Infrastructures and With What Institutional Arrangements? The Case of Public Private Partnerships in Water Supply. In: Kunneke, R., Groenewegen, J., Auger, J.F. (Hrsg.) (2009), *The Governance of Network Industry*. Edward Elgar Publishing, Cheltenham.

Ménard, C., Peero, A. (2011), Liberalization in the Water Sector: Three Leading Models. In: Kunneke, R., Finger, M. (Hrsg.) (2011), *International Handbook of Network Industries: The Liberalization of Infrastructures*. Edward Elgar: 310-327.

Ménard, C. (2013), Is Public-Private Partnership Obsolete? Assessing the Obstacles and Shortcomings of PPP. In: De Vries, P., Yehoue, E.B. (Hrsg.) (2011), *The Routledge Companion to Public-Private Partnerships*. Routledge: 149-174.

Ménard, C. (2017), Meso-institutions: The variety of regulatory arrangements in the water sector. *Utilities Policy* 49: 6-19. <http://dx.doi.org/10.1016/j.jup.2017.05.001>

Ministère de l'environnement (2017), Agence Française pour la biodiversité – Services d'eau et d'assainissement: résultats de l'enquête 2010: <http://www.onema.fr/node/2997> (20.11.2017)

Montalbano, G. (2016), Asymmetric patterns in the Civil Society's access to the European Commission: The cases of DG FISMA and TRADE. In: Marchetti, R. (Hrsg.) (2016), *Partnerships in International Policy-Making. Civil Society and Public Institutions in European and Global Affairs*. Springer: 149-173.

Mühlenkamp, H. (2015), From state to market revisited: A reassessment of the empirical evidence on the efficiency of public (and privately-owned) enterprises. *Annals of Public and Cooperative Economics* 86(4): 535-557.

Mühlenkamp, H. (2016), Ziele, Definitionen und ökonomisch relevante Merkmale von Öffentlich-Privaten Partnerschaften. *ZöGU* 46/2016.

Nettesheim, M. (2016), Die Auswirkungen von CETA auf den politischen Gestaltungsspielraum von Ländern und Gemeinden. Gutachten im Auftrag des Staatsministeriums des Landes Baden-Württemberg, 18.01.2016.

Nettesheim, M. (2017), Umfassende Freihandelsabkommen und Grundgesetz – Verfassungsrechtliche Grundlagen der Zustimmung zu CETA. 25.06.2017: https://www.foodwatch.org/uploads/media/Nettesheim_Studie_CETA-Grundgesetz_25Juni2017.pdf (03.08.2018).

OECD (2007), *Infrastructure to 2030: Mapping policy for electricity, water and transport*. Paris.

OECD (2009), *Managing Water for All: An OECD perspective on pricing and financing*. Paris.

OECD (2010), *Studies on Water Innovative Financing Mechanisms for the Water Sector*. OECD Publishing, Paris.

OECD (2015a), *The Governance of Water Regulators*. OECD Studies on Water, OECD Publishing, Paris: <http://dx.doi.org/10.1787/9789264231092-en>

OECD (2015b), *Water: Fit to Finance? Catalyzing National Growth Through Investment in Water Security – Report of the High Level Panel on Financing Infrastructure for a Water-Secure World*.

OFWAT (2011a), *Financeability and financing the asset base – a discussion paper*, Water Services Regulation Authority (OFWAT), London.

OFWAT (2011b), *Cost of capital and risk mitigants – a discussion paper*, Water Services Regulation Authority (OFWAT), London.

OFWAT (2016), Setting price controls for 2015-20 Overview, Water Services Regulation Authority, London.

OFWAT (2018), Overview: Regulated Companies, Water Services Regulation Authority, London, <https://www.ofwat.gov.uk/regulated-companies/> (12.08.2017).

ONEMA (2013), Les contrats de delegation de service public d'eau potable et d'assainissement entre 1998 et 2010. EauFrance N° 9, Paris.

ORBIS (2018), Unternehmensdatenbank Bureau van Dijk: <https://www.bvdinfo.com/de-de/our-products/company-information/international-products/orbis> (03.08.2018).

ÖVGW (2016), Wasserversorgung im Jahr 2015 – Erfahrungen und Ausblick. Eine Studie im Auftrag der ÖVGW mit Unterstützung vom Ministerium für ein lebenswertes Österreich, erstellt durch Institut für Siedlungswasserbau, Industriewasserwirtschaft und Gewässerschutz, Department Wasser-Atmosphäre-Umwelt, Universität für Bodenkultur Wien, Wien.

ÖVGW (2017), Abschlussbericht ÖVGW Benchmarking 2016 – Benchmarking und Best Practice in der österreichischen Wasserversorgung. Roman Neunteufel et al. ÖVGW, TU Graz, BOKU (Hrsg.). Wien/Graz.

ÖVGW (2018a), AQA-Wasserreport 2017: Bestnoten für Österreichs Wasserversorger, Artikel vom 21.06.2017: <http://www.ovgw.at/aktuell/archiv-2017/?uncollapse=332> (27.02.2018).

ÖVGW (2018b), Trinkwasserversorgung in Österreich – eine sichere Sache, Artikel vom 20.03.2018: <https://www.ovgw.at/aktuell/?uncollapse=343> (17.05.2018).

ÖVGW (2018c), Die österreichische Trinkwasserwirtschaft: Branchendaten und Fakten. Österreichische Vereinigung für das Gas- und Wasserfach.

ÖVGW (2018d), Neue EU-Trinkwasserrichtlinie, Artikel vom 26.06.2018: <https://www.ovgw.at/aktuell/?uncollapse=351> (05.07.2018).

ÖWAV (2016), Branchenbild Abwasserwirtschaft Österreich 2016. Österreichischer Wasser- und Abfallwirtschaftsverband, Wien.

Papp, M. (2007) Die öffentliche Wasserversorgung in Ungarn: Wirtschaftliche und rechtliche Rahmenbedingungen, In: Forum Gas Wasser Wärme, ÖVGW: Wien. S. 8-11.

Passadakis, A. (2006), Die Berliner Wasserbetriebe von Kommerzialisierung und Teilprivatisierung zu einem öffentlich-demokratischen Wasserunternehmen. Europabüro Brüssel, Brüssel: https://berliner-wassertisch.net/assets/files/BWB-Studie_Alexis_Passadakis%20-%20erste%20Auflage.pdf (03.08.2018).

PEAASAR II (2007), Plano Estratégico de Abastecimento de Água e de Saneamento de Águas Residuais 2007-2013. Ministério do Ambiente, do Ordenamento do Território e do Desenvolvimento Regional.

Peck, J., Tickell, A. (2002), Neoliberalizing Space. Antipode 34(3): 380-404.

PENSAAR 2020 (2015), PENSAAR 2020. Uma nova Estratégia para o Setor de Abastecimento de Água e Saneamento de Águas Residuais.

Petitjean, O. (2015), Nice: building a public water company after 150 years of private management. In: Kishimoto, S., Lobina, E., Petitjean, O. (Hrsg.) (2015), Eau publique, eau d'avenir. L'expérience mondiale de la remunicipalisation: 88-95.

- Petitjean, O. (2017), Remunicipalisation in France: From addressing corporate abuse to reinventing democratic, sustainable local public services. In: Kishimoto, S., Petitjean, O. (Hrsg.), Reclaiming public services: How cities and citizens are turning back privatization: 22-33.
- Perard, E. (2009), Water supply: Public or private? An approach based on cost of funds, transaction costs, efficiency and political costs. *Policy and Society* 27(3): 193-219.
- Pezon, C. (2000), Le service d'eau potable en France de 1850 à 1995. Cnam, Paris.
- Pezon, C. (2002), La dérégulation discrète de la distribution d'eau potable en France et l'émergence d'un nouvel acteur collectif, les abonnés. *Flux* 2002/2 (n° 48-49): 62-72.
- Pezon, C. (2009), Organisation et gestion des services d'eau potable en France hier et aujourd'hui. *Revue d'économie industrielle* 127: 131-154.
- Pezon, C. (2011), How the Compagnie Générale des Eaux survived the end of concession contracts in France 100 years ago. *Water Policy* 13(2): 178-186.
- Pigeon, Martin (2012), Une eau publique pour Paris. Symbolism and Success in the Heartland of Private Water. In: Pigeon, M., McDonald, D., Hoedeman, O., Kishimoto, S. (Hrsg.), Remunicipalisation: Putting Water Back into Public Hands. TNI, Amsterdam, 24-39.
- Pierce, G. (2015), Beyond the Strategic Retreat? Explaining Urban Water Privatization's Shallow Expansion in Low- and Middle-income Countries. *Journal of Planning Literature* 30(2): 119-131.
- Plank, L. (2018), Financialising German Infrastructure, Manuskript.
- Plehwe, D. (2012), Europäisches Kräfteressen – europäische Kräfte messen. Eine Auswertung von verfügbaren statistischen Daten zur Entwicklung und zum ungleichen Stand der Interessenvertretung in Brüssel (Organisationen, Personal, Finanzen). Materialien zu Wirtschaft und Gesellschaft Nr. 113. Arbeiterkammer Wien.
- Pollitt, C., Talbot, C. (Hrsg.) (2004), Unbundled government: a critical analysis of the global trend to agencies, quangos and contractualisation. Routledge, London/New York.
- Pollitt, C., Bouckaert, G. (2011), Public management reform – a comparative analysis: New public management, governance, and the neo-Weberian state. Oxford University Press, Oxford.
- Porcher, S. (2012), An Analysis of Renegotiations in Water Franchise Contracts. Working Paper, Université de Paris I.
- Porcher, S. (2017), The 'hidden costs' of water provision: New evidence from the relationship between contracting-out and price in French water public services. *Utilities Policy* 48: 166-175.
- Prausmüller, O., Wagner, A. (2016), Kämpfe um öffentliche Dienstleistungen. Vorwort. *Juridikum* 2/2016: 199-202.
- Prausmüller, O., Wagner, A. (2014a), Reclaim Public Services: Zur aktuellen Auseinandersetzung um die Zukunft öffentlicher Dienstleistungen. In: Prausmüller, O., Wagner, A. (Hrsg.) (2014), Reclaim Public Services: Bilanz und Alternativen neoliberaler Privatisierungspolitik. VSA, Hamburg: 7-21.
- Prausmüller, O., Wagner, A. (2014b), Reclaim Public Services. Artikel vom 07.08.2014: <https://awblog.at/reclaim-public-services-zur-aktuellen-auseinandersetzung-um-die-zukunft-oeffentlicher-dienstleistungen/> (03.08.2018)
- Privatization-Barometer (2017), Privatization Barometer, Fondazione Eni Enrico Mattei (FEEM): www.privatizationbarometer.com (03.08.2018)

Rawson, M. (2004), The nature of water: Reform and the antebellum crusade for municipal water in Boston, *Environmental History*, No 3.

Raza, W. (2008), The WTO – a driving force for the liberalisation of public services in the EU? *Transfer* 14(2): 277-294.

Raza, W. (2009), Privatisierungseffekte in der EU. In: Candeias, M., Rilling, R., Weise, K. (Hrsg.), *Krise der Privatisierung. Rückkehr des Öffentlichen*. Dietz, Berlin: 41-52.

Raza, W. (2012), Der Einfluss internationaler Rahmenbedingungen auf die Erbringung öffentlicher Dienstleistungen am Beispiel GATS. *Der öffentliche Sektor/The Public Sector* 38(2/3): 61-65.

Raza, W. (2014), Öffentliche Dienstleistungen in internationalen Handelsabkommen: Erfahrungen aus der GATS-2000-Debatte. In: Prausmüller, O., Wagner, A. (Hrsg.) (2014), *Reclaim Public Services: Bilanz und Alternativen neoliberaler Privatisierungspolitik*. VSA, Hamburg: 65-85.

Raza, W. (2016), TTIP – mehr Regulierungs- als Freihandelsabkommen. *ZBW – Wirtschaftsdienst* 3/2016: 168-171.

Raza, W., Wedl, V. (2003), Lokale Auswirkungen der Liberalisierung öffentlicher Dienstleistungserbringung in der Europäischen Union: eine polit-ökonomische und rechtliche Analyse. *Wirtschaft und Gesellschaft* 29(3): 415-443.

Raza, W., Wedl, V., Angelo, S. (2004), Liberalisierung öffentlicher Dienstleistungen: Eine konzeptuelle, begriffliche und rechtliche Einführung ins Thema. Arbeiterkammer Wien.

Reynaud (2010), Private sector participation, regulation and social policies in water supply in France. *Oxford Development Studies* 38(2): 219-239.

Ringwald, R., Michaels, S., Jung, D. (2016), *Vergaberecht für Stadtwerke: Leitfaden für die Beschaffungspraxis kommunaler Unternehmen*. Beuth, Berlin.

Romano, G., Guerrini, A. (2011), Measuring and comparing the efficiency of water utility companies: A data envelopment analysis approach. *Utilities Policy* 19(3): 1-8.

Rühle, H. (2014), EU-Richtlinie zu Dienstleistungskonzessionen: Liberalisierung des Wassers wurde verhindert. In: Prausmüller, O., Wagner, A. (Hrsg.) (2014), *Reclaim Public Services: Bilanz und Alternativen neoliberaler Privatisierungspolitik*. VSA, Hamburg: 89-109.

Saraiva, T., Schmidt, L., Pato, J. (2014), Lisbon Water Regimes: Politics, Environment, technology and capital (1850-2000). *Flux* 2014/3 (N° 97-98): 60-79.

Sarmiento, J.M., Renneboog, L. (2015), [Portugal's experience with public private partnerships](#). In: A-kintoye, A., Beck, M., Kumaraswamy, M. (Hrsg.) (2015), *Public Private Partnerships. A Global Review*: 266-282.

Schedler, K., Proeller, I. (2009), *New public management*. 4. Auflage. Haupt Verlag, Bern.

Schenner, E. (2006), EU und Wasserliberalisierung. Eine Analyse auf internationaler und europäischer Ebene. *Informationen zur Umweltpolitik* 167. Kammer für Arbeiter und Angestellte für Wien/Österreichischer Städtebund Wien.

Scherrer, C., Beilecke, F., Fritz, T., Kohlmorgen, L., Schneider, K. (2004), Zur Zukunft öffentlicher Dienstleistungen. Liberalisierung öffentlicher Dienstleistungen durch das GATS. *Gemeinwirtschaftliche Auswirkungen in den Sektoren Wasserversorgung und Verkehr (Schiene, ÖPNV)*, Kammer für Arbeiter und Angestellte Wien.

Schiffler, M. (2015), *Water, Politics and Money: A Reality Check on Privatization*. Springer.

- Schönbäck, W., Oppolzer G., Kraemer, R.A., Handen, W., Herbke, N. (2003), Internationaler Vergleich der Siedlungswasserwirtschaft. Informationen zur Umweltpolitik.
- Schouten, M., Van Dijk, M.P. (2007), The European Water Supply and Sanitation Markets. In: Finger, M., Allouche, J., Luis-Manso, P. (Hrsg.) (2007), Water and Liberalization.
- Silvestre H.C., Araújo J.F. (2012), Public-private Partnerships/Private Finance Initiatives in Portugal – Theory, Practice, and Results: <http://dx.doi.org/10.2753/PMR1530-9576360208>
- Silvestre, H.C. (2012), Public-private partnership and corporate public sector organizations: Alternative ways to increase social performance in the Portuguese water sector? Utilities Policy 22: 41-49. <http://dx.doi.org/10.1016/j.jup.2012.01.002>
- Silvestre, H.C. (2015), Social performance in public services delivery: conceptual roots and results for the Portuguese water sector. International Journal of Water Resources Development 32(1): 43-56. <http://dx.doi.org/10.1080/07900627.2015.1012662>
- Silvestre, H.C., Marques, R.C., Gomes, R.C. (2017), Joined-up Government of utilities: a meta-review on a public – public partnership and inter-municipal cooperation in the water and wastewater industries. Public Management Review 20(4): 607-631.
- Simon, S. (2009), Liberalisierung von Dienstleistungen der Daseinsvorsorge im WTO- und EU-Recht. Mohr Siebeck.
- SISPEA – Système d'information des services publics d'eau et d'assainissement (2017), Observatoire des services publics d'eau et d'assainissement Panorama des services et de leur performance en 2014.
- SPÖ (2017), Plan A, Das Programm für Wohlstand, Sicherheit & gute Laune, <https://spoe.at/Plan-A-2017.pdf>
- Stadtwerke Karlsruhe (2018_japan), Auswertung: Wasserwirtschaft im Wirtschaftsabkommen EU-Japan. Karlsruhe, 25.04.2018: https://www.stadtwerke-karlsruhe.de/swk-media/docs/presse/2018/Auswertung-Wasserwirtschaft_im_Wirtschaftsabkommen_EU-Japan_SWKA_Consilium.pdf (30.05.2018).
- STAL (2016), Gestão pública garante preços mais baixos: <http://www.stal.pt/index.php/arquivo-menu/arquivo-2016/692-gest%C3%A3o-p%C3%BAblica-garante-pre%C3%A7os-mais-baixos.html> (03.08.2018).
- Steinfort, L. (2017), The 835 reasons not to sign trade and investment agreements. In: Kishimoto, S., Petitjean, O. (Hrsg.), Reclaiming Public Services: How cities and citizens are turning back privatisation. TNI/Multinationals Observatory/AK/EPSU/ISF/PSI/PSIRU/We Own It/Fagforbundet/MSP/CUPE, Amsterdam/Paris: 49-67.
- Stoll, P.-T., Holterhus, T.P., Gött, H. (2015), Die geplante Regulierungszusammenarbeit zwischen der Europäischen Union und Kanada sowie den USA nach den Entwürfen von CETA und TTIP. Rechtsgutachten, erstellt im Auftrag der Arbeiterkammer Wien, Juli 2015, Arbeiterkammer Wien.
- Suárez-Varela, M., De los Ángeles García-Valiñas, M., González-Gómez, F., Picazo-Tadeo, A.J. (2017), Ownership and Performance in Water Services Revisited: Does Private Management Really Outperform Public? Water Resources Management 31(8): 2355-2373. <https://doi.org/10.1007/s11269-016-1495-3>
- Sullivan, H., Skelcher, C. (2002), Working Across Boundaries: Collaboration in Public Services. Health & Social Care in the Community 11(2): 183-188.

- Szabó, I., Quesada, M.G. (2017), Historical waves in Hungarian water sector reform and implications for integration. *Utilities Policy* 46: 15-21. <http://dx.doi.org/10.1016/j.jup.2017.02.005>
- Tarr, J., Dupuy, G. (1988), *Technology and the Rise of the Networked City in Europe and America*. Temple University Press.
- Teles, N. (2015), *Financialisation and neoliberalism: The case of water provision in Portugal*. Fessud Financialisation, Economy, Society and Sustainable Development Working Paper Series No 102.
- Terzic, L. (2017), Remunicipalisation in Germany and Austria: What does it mean for employees? In: Kishimoto, S., Petitjean, O. (Hrsg.) (2017), *Reclaiming Public Services: How cities and citizens are turning back privatisation*: 81-92.
- Thatcher M. (1993), *The Downing Street Years*. Harper Colins.
- Tomasi, M. (2016), *Public Private Partnerships in Member States*. DG ECFIN Unit B.4 “Impact on EU policies on national economies”. 10th meeting of public finance economists. Brussels, 02/03/2016.
- Tribunal de Contas (2005), *Concessões rodoviárias em regime de portagem SCUT—Follow-up*, Tribunal de Contas, Lissabon.
- Tribunal de Contas (2008), *Auditoria à gestão das parcerias público privadas—Concessões rodoviárias*, Tribunal de Contas, Lissabon.
- Tribunal de Contas (2014), *Regulação de PPP no Sector das Águas (sistemas em baixa)*, Tribunal de Contas, Lissabon.
- Truger, A. (2015), *Implementing the Golden Rule for Public Investment in Europe Safeguarding Public Investment and Supporting the Recovery*. Materialien zu Wirtschaft und Gesellschaft Nr. 138, Arbeiterkammer Wien.
- Trumbo Vila, S., Peters, M. (2016), *The Privatising Industry in Europe*. TNI Issue Brief, Amsterdam.
- Umweltbundesamt (2014a), *Bericht des Bundesministeriums für Gesundheit und des Umweltbundesamtes an die Verbraucherinnen und Verbraucher über die Qualität von Wasser für den menschlichen Gebrauch (Trinkwasser) in Deutschland – Berichtszeitraum: 1. Januar 2011 bis 31. Dezember 2013*: http://www.umweltbundesamt.de/sites/default/files/medien/378/publikationen/umwelt_und_gesundheit_02_2015_trinkwasserbericht_des_bmg.pdf (20.09.2017).
- Umweltbundesamt (2014b), *Wasserwirtschaft in Deutschland – Teil 1 – Grundlagen*. Bundesministerium für Umwelt, Naturschutz, Bau und Reaktorsicherheit. Bonn.
- Umweltbundesamt (2015), *Technical assessment of the implementation of Council Directive concerning Urban Waste Water Treatment (91/271/EEC)*: http://ec.europa.eu/environment/water/water-urban-waste/implementation/implementationreports_en.htm (22.09.2017).
- Umweltbundesamt (2017), *Aufteilung der Nutzung der Wasservorkommen in km³/Jahr*. In: ÖVGW (2018), *Die österreichische Trinkwasserwirtschaft – Branchendaten und Fakten*. Ausgabe 3/2018.
- Ungarisches Umweltamt (2017), *About us*: <http://oki.antsz.hu/eng> (04.10.2017).
- Unger, B., Groot, L., Van der Linde, D. (2017), *Introduction to the Res Publica*. In: Unger, B., v. d. Linde, D., Getzner, M. (Hrsg.) (2017), *Public or Private Goods? Redefining Res Publica*. Edward Elgar, Cheltenham: 1-17.
- United Nations Statistics Division (2017), *COICOP (Classification of Individual Consumption by Purpose)*. Vereinte Nationen, New York: unstats.un.org (24.05.2017).

- UNCTAD (2017): Investor-State Dispute Settlement: Review of Developments in 2017. IIA Issue Note 2/2018. UNCTAD, Genf. <http://investmentpolicyhub.unctad.org/Publications/Details/1188> (02.08.2018).
- Vassalos, Y. (2008), Secrecy and corporate dominance – a study on the composition and transparency of European Commission Expert Groups. ALTER-EU.
- Verhoest, K., Van Thiel, S., Bouckaert, G., Lægreid, P. (2012), Government Agencies: Practices and Lessons from 30 Countries. Palgrave/Macmillan.
- Vincent, A., Fleury, P. (2015), Development of organic farming for the protection of water quality: Local projects in France and their policy implications. Land Use Policy 43: 197-206.
- Vinnari, E.M., Hukka, J.J. (2007), Great expectations, tiny benefits – Decision-making in the privatization of Tallinn water. Utilities Policy 15(2): 78-85.
- VÖWG (2011), VÖWG kämpft für intelligente Reform des EU-Beihilfenrechts. Verband der öffentlichen Wirtschaft und Gemeinwirtschaft Österreichs, Artikel vom 30.03.2011: <http://www.voewg.at/2011/03/30/eu-beihilfenrecht-reform-des-altmark-pakets-in-sicht/> (29.03.2018).
- Wagenvoort, R., De Nicola, C., Kappeler, A. (2010), Infrastructure finance in Europe: Composition, evolution and crisis impact. EIB Papers 15(1): 16-39.
- Wagner, Alice (2005), EU-Dienstleistungsrichtlinie: Gefahr für die Dienstleistungen von allgemeinem Interesse. Juridikum 3/2005, 148-153.
- Wassergenossenschaft Gramastetten (o.J.), Stellungnahme zum Vorschlag für eine Richtlinie des Europäischen Parlaments und des Rates über die Qualität von Wasser für den menschlichen Gebrauch (Neufassung) – 2017/0332 (COD): https://www.wassergenossenschaft.or.at/attachments/article/486/Stellungnahme_WG_Gramastetten.pdf (10.05.2018).
- Waterwise (2017), Water Efficiency Strategy for the UK. London.
- Weltbank (2018), Private Participation in Infrastructure Database, <http://ppi.worldbank.org>
- Weltbank und PPIAF (2013), PPI data update: Water and sewerage sector 2012. World Bank and Public Private Infrastructure Advisory Facility (PPIAF), Infrastructure Policy Unit.
- Wettenhall, R. (2003), The Rhetoric and Reality of Public-Private Partnerships. Public Organization Review 3(1): 77-107.
- WIFO (2003), Wirtschaftliche Kennzahlen und Effizienz in der österreichischen Siedlungswasserwirtschaft“. Daniela Kletzan, Thomas Url. WIFO Monatsberichte 5/2003. S. 389-404
- WIFO (2014), Ökonomische Analyse 2013 auf der Grundlage der Wasserrahmenrichtlinie. Daniela Kletzan-Slamanig, Franz Sinabell, Dieter Pennerstorfer, Georg Böhs, Martin Schönhart, Erwin Schmid. Österreichisches Institut für Wirtschaftsforschung. Wien. Dezember 2014.
- Williamson, O.E. (1976), Franchise Bidding for Natural Monopolies – in General and with Respect to CATV. Bell Journal of Economics 7(1): 73-104.
- WKO (2017), Investitionsschutz und Investor-Staat-Streitbeilegung. Eine Kurzdarstellung aus Sicht der österreichischen Wirtschaft. Wirtschaftskammer Österreich, Artikel vom 27.09.2017: https://www.wko.at/service/aussenwirtschaft/Investitionsabkommen_-_Kurzdarstellung.html (25.10.2017).

Wollmann, H. (2014), Public Services in European Countries: Between Public/Municipal and Private Sector Provision – and Reverse?. In: Nunes Silva, C., Bucek, J. (Hrsg.) (2014), Fiscal Austerity and Innovation in Local Governance in Europe. Ashgate, Oxon.

Wollmann, H., Kopric, I., Marcou, G. (Hrsg.) (2016), Public and Social Services in Europe: From Public and Municipal to Private Provision. The Governance and Public Management Series: <http://dx.doi.org/10.1057/978-1-137-57499-2>

WRc/ecologic (2002), Study on the Application of the Competition Rules to the Water Sector in the European Community. December 2002. Study prepared by WRc and ecologic for the European Commission – Competition Directorate General: http://europa.eu.int/comm/competition/publications/studies/water_sector_report.pdf (03.08.2018).

Wüstneck, S. (2012), Das „Almunia“-Paket der Europäischen Kommission. Neue Regeln für Dienstleistungen von allgemeinem wirtschaftlichen Interesse (DAWI). EweRK 3/2012: 116-117.

Yarrow, G., Appleyard, T., Decker, C., Keyworth, T. (2009), Competition in the provision of water services. Untersuchung des Regulatory Policy Institute, Endbericht, Oxford.

Young, R.A., Haveman, R.H. (1985), Economics of water resources: a survey. In: Kneese, A. V., Sweeney, J.L. (Hrsg.) (1985), Handbook of Natural Resource and Energy Economics, Vol. II.. Elsevier Science Publishers: 465-529.

List of tables

Table 1: Provision, financing and regulation of public goods and services: normative analysis of the justifications for state intervention in water management systems	15
Table 2: Options for governance and competition as well as model variables of a stylised public, delegated and private infrastructure supply in water management	18
Table 3: Population density and urban-rural typology according to population distribution	47
Table 4: Water production for public water supply	48
Table 5: Technical foundations of water supply	49
Table 6: Length of sewer systems	49
Table 7: Treatment of municipal wastewater according to treatment stages	50
Table 8: Comparison of investments in water supply and sanitation (2000-2015, real and adjusted for purchasing power)	52
Table 9: Comparison of subsidies in water supply and sanitation (2000-2015, real and adjusted for purchasing power)	52
Table 10: Total and average expenditure and tariffs (fees) for private households purchasing water (EUR, price base, 2016).	53
Table 11: Total and average expenditure and tariffs (fees) for wastewater disposal in private households	54
Table 12: Compliance rate of factor figures in groups (2013)	56
Table 13: Water pipeline losses in the countries being compared	57
Table 14: Overview of ideal PPP models	62
Table 15: Concessions in Portuguese water supply and sanitation (1995-2016)	67
Table 16: Population provided for according to types of organisation in France (in %)	72
Table 17: Selected figures for English water and sanitation suppliers (cumulative, 2007-2016)	79
Table 18: Selected average proportion of spending by English water supply companies (in % of revenue)	81

List of figures

Figure 1: Proportion of public and private supply systems in cities with more than 1 million inhabitants (globally) _____	17
Figure 2: Aspects and ideal types for describing water management systems _____	22
Figure 3: Basic categorisation of the water management systems in Austria, Germany, England and Wales, France, Hungary and Portugal _____	22
Figure 4: Two dimensions of conflict in the European law of public services _____	24
Figure 5: Overview of central reference points for policies at the level of internal market, trade and fiscal policy, 2010-2018 _____	25
Figure 6: Population supplied according to ownership structure for water supply and sanitation companies (in %) _____	51
Figure 7: Index of price progression for water supply (1996-2016; 1996=100) _____	55
Figure 8: Index of price progression for sanitation (1996-2016; 1996=100) _____	56
Figure 9: Number of PPPs in the EU for particular sectors (2000-2015) _____	64
Figure 10: Debt-to-equity ratio of English and Welsh suppliers (2001 vs. 2016). _____	75
Figure 11: Thames Water Utilities Ltd. corporate structure and flow of funding _____	80

INFORMATION ON ENVIRONMENTAL POLICY

“Information on environmental policy” is published on an irregular basis by the Institute for Economy and Environment (*Institut für Wirtschaft und Umwelt*) of the Chambers of Labour (*Arbeiterkammer, AK*) and covers current questions on environmental policies. It is primarily meant as information material and a basis for discussions for people interested in this topic.

If you are interested in issues which are not available any longer, please turn to the Social Sciences Study Library (*Sozialwissenschaftliche Studienbibliothek*) of the Vienna Chamber of Labour (*AK Wien*).

- | | |
|--|--|
| <p>156 <i>Umweltschutz- und ArbeitnehmerInnenschutz- Managementsysteme</i>
Thomas Gutwinski, Christoph Streissler (Hrsg.), 2003</p> <p>157 <i>Bestrafung von Unternehmen – Anforderungen an die kommende gesetzliche Regelung aus ArbeitnehmerInnen- und KonsumentInnen-sicht,</i>
Tagungsband, Werner Hochreiter (Hrsg.), 2003</p> <p>158 <i>Was kostet die Umwelt? Wie umweltverträglich ist die EU?</i>
Tagungsband, 2004</p> <p>159 <i>Schutz von Getränkemehrwegsystemen – Aufarbeitung fachlicher Grundlagen anlässlich der Aufhebung der Getränkeziele durch den Verfassungsgerichtshof</i>
Walter Hauer, 2003</p> <p>160 <i>Soziale Nachhaltigkeit</i>
Beate Littig, Erich Griebler, 2004</p> <p>161 <i>Der „Wasserkrieg“ von Cochabamba. Zur Auseinandersetzung um die Privatisierung einer Wasserversorgung in Bolivien</i>
Hans Huber Abendroth, 2004</p> <p>162 <i>Hauptsache Kinder! Umweltpolitik für Morgen</i>
Tagungsband, 2004</p> <p>163 <i>Verkehrsmengen und Verkehrsemissionen auf wichtigen Straßen in Österreich 1985 - 2003</i>
Österreichisches Institut für Raumplanung, 2004</p> <p>164 <i>Einflussfaktoren auf die Höhe der Müllgebühren,</i> 2005</p> <p>165 <i>Anteil des Lkw-Quell-Ziel-Verkehrs sowie dessen Emissionen an gesamten Straßengüterverkehr in Wien</i>
Österreichisches Institut für Raumplanung, 2006</p> | <p>166 <i>Privatisierung des Wassersektors in Europa Reformbedarf oder Kapitalinteressen?</i>
Wolfgang Lauber (Hrsg.), 2006</p> <p>167 <i>EU und Wasserliberalisierung</i>
Elisa Schenner, 2006</p> <p>169 <i>REACH am Arbeitsplatz Die Vorteile der neuen europäischen Chemikalienpolitik für die ArbeitnehmerInnen</i>
Tony Musu, 2006 (vergriffen)</p> <p>170 <i>Feinstaub am Arbeitsplatz Die Emissionen ultrafeiner Partikel und ihre Folgen für ArbeitnehmerInnen</i>
Tagungsband, 2006</p> <p>171 <i>Luftverkehr und Lärmschutz Ist-Stand im internationalen Vergleich Grundlagen für eine österreichische Regelung</i>
Andreas Käfer, Judith Lang, Michael Hecht, 2006</p> <p>173 <i>Welche Zukunft hat der Diesel? Technik, Kosten und Umweltfolgen</i>
Tagungsband, Franz Greil (Hrsg.), 2007</p> <p>174 <i>Umsetzung der EU-Umwelthaftungsrichtlinie in Österreich</i>
Tagungsband ergänzt um Materialien und Hintergrunddokumente zum Diskussionsprozess, Werner Hochreiter (Hrsg.), 2007</p> <p>175 <i>Klimaschutz, Infrastruktur und Verkehr</i>
Karl Steininger et.al., 2007</p> <p>176 <i>Die Strategische Umweltprüfung im Verkehrsbereich</i>
Tagungsband, Cornelia Mittendorfer (Hrsg.), 2008</p> <p>177 <i>Die UVP auf dem Prüfstand – Zur Entwicklung eines umkämpften Instruments</i>
Tagungsband, Cornelia Mittendorfer (Hrsg.), 2008</p> <p>178 <i>Die Umsetzung der EU-Umgebungs-lärmrichtlinie in Österreich</i></p> |
|--|--|

- Tagungsband, Werner Hochreiter (Hrsg.), 2008
- 179 *Feinstaubproblem Baumaschine Emissionen und Kosten einer Partikelfilternachrüstung in Österreich*, 2009
- 180 *Mehrweg hat Zukunft! Lösungsszenarien für Österreich im internationalen Vergleich*
Tagungsband, Werner Hochreiter (Hrsg.), 2010
- 181 *Siedlungswasserwirtschaft in öffentlicher oder privater Hand – England/Wales, Niederlande und Porto Alegre (Brasilien) als Fallbeispiele*
Thomas Thaler, 2010
- 182 *Aktionsplanung gegen Straßenlärm – wie geht es weiter?*
Tagungsband, Werner Hochreiter (Hrsg.), 2010
- 183 *Agrotreibstoffe – Lösung oder Problem? Potenziale, Umweltauswirkungen und soziale Aspekte*
Tagungsband, Christoph Streissler (Hrsg.), 2010
- 184 *Lkw-Tempolimits und Emissionen Auswirkungen der Einhaltung der Lkw-Tempolimits auf Autobahnen auf Emissionen und Lärm*, 2011
- 185 *Gesundheitsrelevante Aspekte von Getränkeverpackungen*, 2011
- 186 *Green Jobs – Arbeitsbedingungen und Beschäftigungspotenziale*, 2012
- 187 *Die Zukunft der Wasserversorgung Der Zugang zu Wasser im Spannungsfeld zwischen öffentlichem Gut, Menschenrecht und Privatisierung*
Tagungsband, 2013
- 188 *Aktuelle Erkenntnisse zu hormonell wirksamen Substanzen*
Tagungsbericht, 2013
- 189 *Pkw-Emissionen zwischen Norm- und Realverbrauch*
Holger Heinfellner, Nikolaus Ibesich, Günther Lichtblau, Christian Nagl, Barbara Schodl, Gudrun Stranner (Hrsg.), 2015
- 189a *Passenger Car Emissions: Standard and Real-World Fuel Consumption*
Holger Heinfellner, Nikolaus Ibesich, Günther Lichtblau, Christian Nagl, Barbara Schodl, Gudrun Stranner, 2015
- 190 *Demokratierechtliche Analyse der privaten Rechtssetzung im Umweltrecht am Beispiel der Industrieemissionsrichtlinie (IE-RL)*
Konrad Lachmayer, 2016
- 191 *Positionen internationaler Gewerkschaften in der Klimapolitik*
Jana Flemming, Ulrich Brand, 2017
- 192 *15 Jahre Aarhus-Konvention*
Tagungsband, Werner Hochreiter (Hrsg.), 2017
- 193 *Zwischen Norm- und Realverbrauch Was hat sich in Österreich seit 2015 bei neuen Pkw verändert?*
Holger Heinfellner, Günther Lichtblau, Barbara Schodl, 2017
- 194 *Environmental Inequality In Europe Towards an environmental justice framework for Austria in an EU context*
Liesbeth de Schutter, Hanspeter Wieland, Burcu Gözet, Stefan Giljum, 2017
- 195 *Neue biotechnologische Züchtungstechniken Rechtliche Einordnung in Hinblick auf die Schlussanträge von Generalanwalt Bobek zum Vorabentscheidungsverfahren C-528/16*
Anita Greiter, Andreas Heissenberger, 2018
- 196 *Pkw-Emissionen aus Umwelt- und Verbrauchersicht Fakten und Regulierungsdefizite*
Günther Lichtblau, Barbara Schodl, 2018
- 197 *Vergleich europäischer Systeme der Wasserversorgung und Abwasserentsorgung Endbericht (Langfassung)*
Michael Getzner, Bettina Köhler, Astrid Krisch, Leonhard Plank, 2018
- 197a *Vergleich europäischer Systeme der Wasserversorgung und Abwasserentsorgung Endbericht (Kurzfassung)*
Michael Getzner, Bettina Köhler, Astrid Krisch, Leonhard Plank, 2018
- 197b *Comparison of European water supply and sanitation systems Final report (abridged version)*
Michael Getzner, Bettina Köhler, Astrid Krisch, Leonhard Plank, 2018