

# Regulation of the Water Industry and Competition in Water Markets – The Case of Scotland (UK)

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## **Abstract**

Discussions about water and wastewater services in the United Kingdom focus mostly on the unique, private water market model of England and Wales. The water market of Scotland always seems to be of minor interest, although the Scottish water industry was the first to establish a competitive retail water market for non-household customers. Since April 2008 business customers and non-profit organisations are no longer bound to a monopoly company, but are able to choose between different licensed retail providers of water and wastewater services.

The lack of competition in water markets is an often discussed, perpetual controversy. Three years after the opening of the Scottish retail water market, the Water Industry Commission for Scotland (WICS) strikes a first balance. The first costs and benefits of this competitive water market structure for non-household customers become evident now and give hints for future developments.

This paper is introducing the current regulatory framework of the Scottish water industry, which is characterised by the work of five key players. The public company Scottish Water, which offers water and wastewater services to household customers and also provides these services as wholesale to licensed providers, is owned by the Ministers and Scottish Parliament. In addition to the aforementioned economic regulator WICS, there are the Drinking Water Quality Regulator and the Scottish Environment Protection Agency, which influence the water industry. Furthermore, the paper discusses the first results of the competitive water market for non-household customers.

## **Key Words:**

*Scotland, economic regulator, competition, legal framework*

# 1. Introduction

Discussions about water and wastewater services in the United Kingdom focus mostly on the unique, private water market model of England and Wales. The water market of Scotland always seems to be of minor interest, although the Scottish water industry was the first to establish a competitive retail water market for non-household customers. Since April 2008 business customers and non-profit organisations are no longer bound to a monopoly company, but are able to choose between different licensed retail providers of water and wastewater services.<sup>1</sup>

The lack of competition in water markets is an often discussed, perpetual controversy. Three years after the opening of the Scottish retail water market, the Water Industry Commission for Scotland (WICS) strikes a balance. The first costs and benefits of this competitive water market structure for non-household customers become evident now and give hints for future developments.

This paper is a first, slightly modified extraction of an ongoing report within the EU-project TRUST. “The central objective of the European project initiative TRUST is to deliver co-produced knowledge to support **T**ransitions to the **U**rban **W**ater **S**ervices of **T**omorrow, enabling communities to achieve a sustainable, low carbon water future without compromising service quality.”<sup>2</sup> 30 partners from 11 different countries analyse the current situation in the European water sector and try to find effective solutions for handling with water related questions in the future. One subtask of this EU-project is to give a status quo of several European water markets and their regulatory frameworks. A very characteristic regulatory approach is implemented in Scotland, which is the subject of this paper.

To familiarise the reader with this interesting topic, the paper is organised as follows. Chapter 2 gives a short overview of some country specific characteristics and challenges of Scotland, which have influence on the Scottish water industry. The 3rd chapter of this paper represents the regulatory framework of the Scottish water industry, which is mainly characterised by the work of five key players. Chapter 4 discusses the first results of the competitive water market for non-household customers in Scotland, before some concluding statements and hints for the future development are given in the last chapter.

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<sup>1</sup> See *Water Industry Commission for Scotland* (2010): Competition in the Scottish water industry, p.3.

<sup>2</sup> *Transitions to Urban Water Services of Tomorrow* (2011): Proposal, p.4.

## 2. Country specific Characteristics and Challenges of Scotland

Scotland is part of the United Kingdom and is localised in the Northwest of Europe. The land area of Scotland is about 80,000 km<sup>2</sup> with around 18,000 km of coastline. There are many islands belonging to mainland. 118 are inhabited islands whereas more than 800 islands are uninhabited.<sup>3</sup> The Scottish population is fortunate to have extensive fresh water resources. Over 90 % of the total fresh water volume in the United Kingdom is available in Scotland. Particularly Scotland's fresh water resources represent around 2 % of its land area.<sup>4</sup> The total rainfall over Scotland is, with 113.150 million cubic meters of rainwater per year, high compared to the United Kingdom as a whole. But it is significant that about 73 % of the total rainfall is estimated to runoff into the sea.<sup>5</sup> All in all the climate of Scotland can be described as mild and wet. The absence of temperature extremes and rainfall during the whole year, without longer draught periods are characteristic for Scotland.<sup>6</sup>

The population density of Scotland is with around 65 people per square kilometre extremely low. Therefore it is a challenge to provide around 5,194,000 inhabitants over partially long distances with water and wastewater services. Studies concerning the demographic development in Scotland expect a population rise during the next 20 years. By 2033 there are estimated about 5,540,000 inhabitants, which means an increase of 6,7 %.<sup>7</sup> This development will also influence the performances in the water sector. The Scottish drinking water network consists currently of 47,575 km water pipes. The sewer network is even 50,412 km long. Over 1,800 wastewater treatment works and around 284 water plants ensure that 1.3 billion litres of drinking water are produced and 800 million litres of wastewater are removed per day.<sup>8</sup>

As in all countries, the water industry has to face the typical challenges of a network industry. "A *network industry* is one that supplies a public or basic service by operating a large infrastructure network whose characteristics are: strongly increasing returns on scale, high levels of capital intensity, and long

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<sup>3</sup> See *The Scottish Government (Publisher)* (2011): Scotland's Marine Atlas, p.22.

<sup>4</sup> See *Scottish National Heritage* (2002): Fresh Waters, p.7.

<sup>5</sup> See *The Scottish Government (Publisher)* (2011): Scotland's Marine Atlas, p.26.

<sup>6</sup> See for detailed climate datasets over the last 100 years *Met Office* (2011): Scotland Rainfall; *Met Office* (2011): Scotland Mean Temperature.

<sup>7</sup> See *Scottish Government Social Research* (2010): Demographic Change in Scotland, p. 9.

<sup>8</sup> See *Scottish Water* (2011): Annual Reports and Accounts 2010/11, p.0.

life of industrial assets.”<sup>9</sup> The delivery of water is bound to pipes, which makes competition in the market very difficult.<sup>10</sup> On the one hand it is not possible to inject and distinguish the water of two different suppliers within a network. On the other hand it does not make economic sense to have a separated, second pipe system, because of the sector’s capital intensity. The Scottish Parliament has assumed this problem and is pioneer by implementing a competition forcing regulatory framework.

### 3. Regulation of the Scottish Water Industry

This chapter is introducing the current regulatory framework of the Scottish water industry, which is mainly influenced by the work of five actors. Several of these actors were established by legislation during the last 10 years to ensure a regulated, more efficient work in the water sector respectively the water management.

#### 3.1 Legislation

The legal basis of the current regulatory framework is mainly characterised by the *Water Industry (Scotland) Act 2002* and the *Water Services etc. (Scotland) Act 2005*. Before 2002 the water and wastewater services in Scotland were managed by three public water authorities. They were responsible for the regions North, East and West and had a monopoly status in their local draw area. By the Water Industry Act, which was passed in 2002, the three public water authorities were consolidated and thereby Scottish Water was established.<sup>11</sup> ”The Scottish Executive argued that a single authority was better placed to avoid regional price disparities, financial capital investment and maximise economies of scale.”<sup>12</sup> Furthermore, the establishment of a monopoly water and sewerage service provider for whole Scotland gave the chance for more competition in the market, which at first glance is not visible. But considering the efforts of the Scottish Parliament in 2005 the competitive opportunities of this situation are obvious.

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<sup>9</sup> *Bouttes, Jean-Paul;Leban, Raymond* (1995): Competition and regulation in Europe’s network industries from theoretical approach to sectorial application, p.127.

<sup>10</sup> See *Dierkes, Mathias; Hamann, Rolf* (2009): Öffentliches Preisrecht in der Wasserwirtschaft, p.17.

<sup>11</sup> See *The Scottish Parliament* (2002): Water Industry (Scotland) Act 2002, p.1 and p.11.

<sup>12</sup> *Lobina, Emanuele;Terhorst Philipp* (2005): D19: Water Time Case Study – Edinburgh, UK.

The Water Services Act was implemented in 2005 among other

- “[...] to establish the Water Industry Commission for Scotland [...],
- to provide for licensing for provision of certain water and sewerage services,
- to amend the system for fixing charges for services provided by Scottish Water,
- to make provision as to Scottish Water’s functions [...]”.<sup>13</sup>

The full, detailed content cannot be covered here, but it should be noted that the Water Services Act permits and regulates the wholesale of water and sewerage services from Scottish Water to licensed providers and establishes the Water Industry Commission for Scotland as economic regulator concerning charges and competition.

By implementing this unique regulatory framework the Scottish Parliament paved the way for a limited network opening. Before chapter 4 will focus on the competitive retail market in Scotland in detail, following the main actors in the water market shall be presented and be set in relation to each other.

### **3.2 Actors in the Water Market**

This section is representing the role and work of the five key actors in the Scottish water market: The Ministers and Scottish Parliament, Scottish Water, The Water Industry Commission of Scotland, The Drinking Water Quality Regulator and the Scottish Environment Protection Agency. Furthermore, the role of the Central Market Agency and the recent abolition of Waterwatch Scotland in August 2011 will be addressed.

The public company *Scottish Water (SW)*, which offers water and wastewater services to all household customers in Scotland, is owned by the *Ministers and Scottish Parliament* and is thereby accountable to them. Beside of delivering potable water to all Scottish household customers and removing their sewerage, SW also provides these services as wholesale to different licensed providers, which offer water and wastewater services to business customers and non-profit organisations.<sup>14</sup>

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<sup>13</sup> *The Scottish Parliament (2005): Water Services etc. (Scotland) Act 2005, p.1.*

<sup>14</sup> See for this and the next paragraphs *Water Industry Commission for Scotland (2011): Who’s who in the Scottish water industry.*

In contrary to many other countries, the Scottish water market has an economic regulator called the *Water Industry Commission of Scotland (WICS)*. The main task of the WICS, which was established by the Water Services Act in 2005 “[...] is to ensure that the Scottish water industry provides a high-quality service and value for money to customers.”<sup>15</sup> Pursuing this target the WICS is setting prices for water and sewerage services, facilitating competition in the field of business customers and non-profit organisations as well as licensing the new providers.

In addition to the aforementioned economic regulator WICS, there are the *Drinking Water Quality Regulator (DWQR)* and the *Scottish Environment Protection Agency (SEPA)*, which influence the performance of the water industry. The DWQR was established by the Water Industry Act in 2002 to ensure a good tap water quality around Scotland by monitoring the performance of Scottish Water and enforcing higher quality standards. In this Act the main competencies of the DWQR were set and specialised. The DWQR acts independent and is authorised to get relevant data from Scottish Water and to make technical inspections to ensure a high standard of drinking water quality. This information is available for the Scottish Parliament and the public in form of an annual report.<sup>16</sup>

SEPA was established by the Environment Act 1995 to protect and improve the Scottish environment. This includes the subtask of water environment protection.<sup>17</sup> In contrary to the DWQR, who monitors the potable water quality for end users, SEPA controls the quality of Scotland’s water resources. SEPA regulates activities which have direct influence on the water environment and gives hints for future investment needs to the Scottish Ministers. The main target concerning water is a sustainable protection and improvement of the Scottish water resources for the future.<sup>18</sup> To monitor the right handling of Scottish Water’s discharges is one way to improve the environment.

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<sup>15</sup> *Water Industry Commission for Scotland* (2011): Who’s who in the Scottish water industry, p.2.

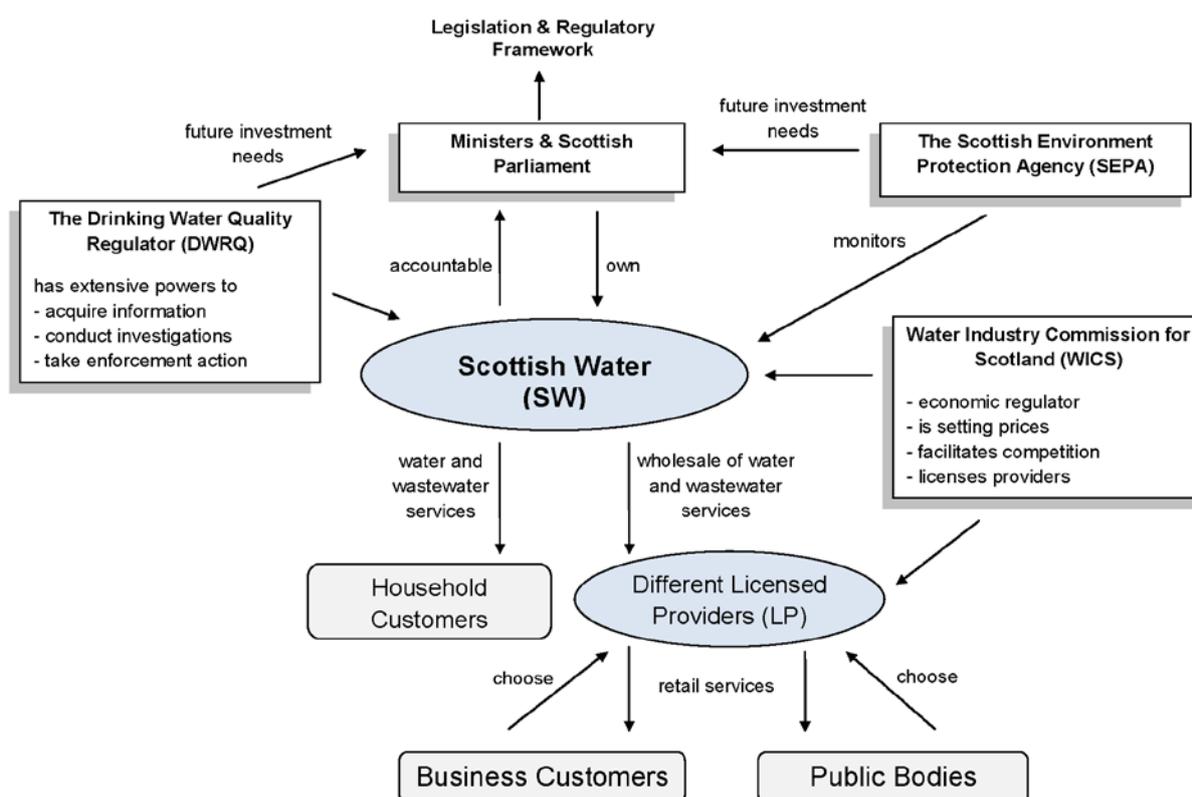
<sup>16</sup> See *Drinking Water Quality Regulator* (2008): Charter of the Office of the Drinking Water Quality Regulator for Scotland, pp.3-5.

<sup>17</sup> See *Parliament of the United Kingdom* (1995): Environment Act 1995, Introductory Text and paragraph 34.

<sup>18</sup> See *Scottish Environment Protection Agency* (2011): Annual Reports and Accounts 2010-2011, p.2 and the tab ‘Water’ on the Homepage of the *Scottish Environment Protection Agency* (2011).

Until 15<sup>th</sup> August 2011 the Scottish water customers were able to report difficulties concerning their water supply and/or their sewerage services to *Waterwatch Scotland*. This authority, which was dealing with customer's complaints against their water providers, representing their view's and influencing policy, was closed recently by the Public Services Reform (Scotland) Act 2010. Customers are now asked to contact *Scottish Public Services Ombudsman (SPSO)* if they want to make complaints against their water provider and *Consumer Focus Scotland* if they wish their interests to be represented.<sup>19</sup>

The illustration below gives an overview of the structures of the Scottish water industry. Especially the competitive retail market for business customers and public bodies is presented. The next chapter will deal with this issue in detail.



**Illustration:** Main Structure of the Scottish Water Industry<sup>20</sup>

<sup>19</sup> See *Waterwatch Scotland* (2011): Important Information.

<sup>20</sup> Own illustration based on *Water Industry Commission for Scotland* (2011): Who's who in the Scottish water industry.

## 4. Competition in the Scottish Water Sector

As mentioned before, competition in water markets is an often discussed, controversial issue in the sector. The high capital intensity, the dependence of drinking and waste water pipes and the long life-time of assets lead traditionally to the fact that only one provider prevails in one region. One possibility to force more competition in the market can be a network opening. “In substance, to foster competition by network opening means allowing consumers to contract directly with suppliers of their choice for the services they require, and to force the network operators that lie ‘on the way’ to convey the resource in return for a ‘fair and reasonable’ toll.”<sup>21</sup> The situation in the Scottish water market is not a pure network opening in the above sense, but at least the opening of the retail market in the field of non-domestic customers. Business customers, public bodies and not-for-profit organisations have the opportunity to choose between different licensed providers.

The Water Services etc. (Scotland) Act 2005 laid the legal foundation for the opening of the competitive retail market on 1<sup>st</sup> April 2008.<sup>22</sup> The role of Scottish Water, which has been the monopoly provider of water and sewerage services for all customers around Scotland until then, changed.

Scottish Water still controls the publicly owned water and sewerage network and all related assets. Furthermore, it is responsible for the physical delivery of water and removal of wastewater. But SW is only the direct provider of all 2.4 million household customers. The 130,000 business customers and public bodies are able to choose between the retail services of four licensed providers. This is possible, because SW acts as wholesaler of water and wastewater services to different retailers. These retailers complement the pure physical services with customizing services like water metering, billing and contact opportunities, which the end consumer has to pay for. Depending on how much they are willing to pay for the additional services, the non-domestic customers can choose between all providers regardless of their location.<sup>23</sup>

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<sup>21</sup> *Bouttes, Jean-Paul; Leban, Raymond* (1995): Competition and regulation in Europe’s network industries from theoretical approach to sectorial application, p.128.

<sup>22</sup> See *Water Industry Commission for Scotland* (2011): Introducing retail competition in Scotland: Lessons learned, p.1.

<sup>23</sup> See *Water Industry Commission for Scotland* (2011): Are you planning to switch?, pp.1-2.

The four active retailers in the Scottish water industry are Aimeria, Business Stream, Osprey and Sa-tec.<sup>24</sup> They were licensed by the Water Industry Commission for Scotland, which is responsible to check, if the providers possess adequate knowledge, expertise and experience. Furthermore, the applicants require financial acumen and business viability.<sup>25</sup>

The non-domestic customers are able to switch between two of the licensed providers by contacting the new provider and giving him their supply point identification number. The chosen retailer will coordinate the switch in cooperation with the *Central Market Agency (CMA)*.<sup>26</sup> The CMA is responsible for administering the competitive retail market. Keeping a customer register, recording the switch of non-domestic customers between two retailers and calculating the wholesale charges which have to be paid to Scottish Water are the main tasks of this independent organization. The members of the CMA are all licensed providers and Scottish Water as founding member. Further duties of the CMA are recorded in the 'Market Code' and the 'Code Subsidiary Documents'.<sup>27</sup>

Beside of the opportunity to choose a retailer, non-domestic customers are able to get a self supply license. In this case the customer pays the wholesale charges to Scottish Water, but does not receive any additional services as for example meter reading or incident assistance from any retailer.<sup>28</sup>

The explanations above demonstrate how the opening of the competitive retail market was implemented and how it currently works. Nevertheless, the structure of the water market implies that Scottish Water has still a monopoly status. The retailers are bound to the wholesale services of SW and thereby to its prices. To avoid the misuse of this lack of competition on the wholesale level is one of the main challenges of the Water Industry Commission for Scotland. As economic regulator, who shall facilitate the competition in the Scottish water market, the WICS regulates the wholesale prices of Scottish Water to protect the customer's interests. More precisely the WICS regulates the prices for SW's wholesale services. On the one hand to ensure low price volatility and on the other hand to make

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<sup>24</sup> See *Water Industry Commission for Scotland* (2011): Scotlandontap.

<sup>25</sup> See *The Scottish Parliament* (2005): Water Services etc. (Scotland) Act 2005, p.8.

<sup>26</sup> See *Water Industry Commission for Scotland* (2011): Are you planning to switch?, p.1.

<sup>27</sup> See *Central Market Agency Scotland* (2008): Business water market goes alive, press release.

<sup>28</sup> See *Water Industry Commission for Scotland* (2011): Are you planning to switch?, p.2.

sure that the costs which are related to the drinking water quality and environmental issues can be recovered.<sup>29</sup>

On the retail level also exists a safety net to protect the interests of non-domestic customers. Every retailer has to offer standard services for a default tariff. This default charge is the maximum price the non-domestic customers had to pay for Scottish Water's water and wastewater services, if the retail market opening did not take place.<sup>30</sup>

As Scotland was the first country worldwide to open the competitive retail market in the water sector, it is of major interest to have a closer look at the costs and benefits of the Scottish system which was implemented three years ago. Thereby potentially interested countries have the opportunity to weigh up the advantages and disadvantages.

A system, which forces more competition on the retail level, offers a lot of benefits. The engagement for customers has a direct influence on the water and wastewater pricing. The retailers are asked to deliver better performance for lower prices. More cost-effective measures and additional services are important to survive in the market. The non-domestic customers can choose between the retailer's offers and extra services, finding the best price to value ratio for their own. Expanded services are for example e-services like e-billing, easier contact opportunities and quicker responses to customer requests, incident assistance and services to identify and reduce leaks. Aiming best customer satisfaction, the retailers as informed buyers of wholesales put pressure on Scottish Water to improve its performance as well. This has also an indirect, positive influence on the water and wastewater services for household customers, because if SW improves its performance, it will not only affect the non-domestic level. The Overall Performance Assessment (OPA) score indicates the performance quality of SW among others by the improvement of the drinking water quality, the reduction of supply interruptions and the numbers of homes with adequate water pressure. The OPA score of SW has increased significantly since 2008.<sup>31</sup> Further advantages are the simple switching between retailers and the envi-

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<sup>29</sup> See *Water Industry Commission for Scotland* (2010): Competition in the Scottish water industry, p.5.

<sup>30</sup> See *Water Industry Commission for Scotland* (2011): Are you planning to switch?, p.3.

<sup>31</sup> See *Scottish Water* (2011): Annual Reports and Accounts 2010/11, p.9.

ronmental benefits, because the retailers offer more information about the customer's detailed water consumption and how to reduce it.<sup>32</sup>

Beside of these benefits, the success of implementing a competitive retail market has also to be measured from the financial point of view, because of the high costs linked to the implementation. In its audit trail the WICS has broken down the costs and benefits in detail.

In the first step the calculations were made under consideration of the actual set up and ongoing costs and the one-off savings achieved from 2006/07 to 2009/10. The set up costs for SW's preparation for competition, the establishment of the CMA and the cost which incurred for the WICS by establishing the whole competitive framework amount to £ 22.5 million (~ €26.2 million). Furthermore, the actual ongoing costs incurred by the CMA, the annual levy, which has to be paid by the licensed providers to WICS for overseeing the market, and the additional return for Business Stream were collected. It turned out, that the ongoing costs until 2009/10 have been around £ 8.5 million (~ €9.9 million). In contrast the one-off savings caused by the competitive retail market are estimated to amount £ 18.4 million (~ €21.4 million) in the same period. This value includes savings in operating costs and financing costs. The second step was to use the existing datasets for an adequate estimation of future costs and savings. Taking into account the Net Present Value (NPV) of the ongoing costs and the one-off savings from 2010/11 onwards as well as and the NPV of future dynamic efficiencies in the retail business and in the wholesale business, the WICS estimates significant savings as result of the audit. Including the costs and savings of step 1, the savings in the future are approximately £ 332.8 million (~ €387.2 million).<sup>33</sup>

Nevertheless the opening of the competitive retail market is not only connected with benefits. In its Annual report 2009 – 2010 Waterwatch Scotland, who was representing the customer views and interests until August 2011, pointed out several difficulties concerning the system implementation. According to Waterwatch there has been a significant increase of customer contacts. "Many business users

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<sup>32</sup> See for the whole paragraph Sutherland, Alan D.A.(2011): *Water retail market savings: the experience in Scotland*, p.5; *Water Industry Commission for Scotland* (2010): *Competition in the Scottish water industry*; *Water Industry Commission for Scotland* (2011): *Are you planning to switch?*

<sup>33</sup> See *Water Industry Commission for Scotland* (2011): *Retail competition in Scotland: An audit trail of the costs incurred and the savings achieved*.

are still not aware of competition or experience difficulties switching supplier.”<sup>34</sup> The analysis of incoming customer inquiries has shown that many users were frustrated by the additional bureaucracy. Furthermore, the licensed providers were not always delivering the services the customers expected them to do.<sup>35</sup>

Although Waterwatch Scotland underlined that these matters are primarily teething problems,<sup>36</sup> which can be solved, there has to be a higher effort to facilitate competition. The current market shares of the retailers might give a hint that full competition on the retail level has not been reached yet. It is striking that Business Stream, who is the licensed subsidiary of Scottish Water,<sup>37</sup> is the leading retail service provider by serving around 90 % of the non-domestic customers.<sup>38</sup>

## 5. Conclusions

It was a courageous step of the responsible people in Scotland to be the worldwide pioneer in opening the retail water market. The risk of being the first country to implement such a system is much higher than just adopting a proven, workable and successful system. They have tried “[...] to make competition both loyal and efficient, which means regulating market entry and behaviour by multiple actors, and defining the terms an price of access to public networks.”<sup>39</sup>

The physical water supply and wastewater removal is still in the hand of the publicly owned company Scottish Water, which ensures a save handling with the network and all treatment works around Scotland. This is quite of importance as the water supply is a service of general interest. Furthermore, it promotes the exploitation of economies of scale. In combination with an ex ante regulation of a competitive retail market it is not only unique, but also successful. The benefits are visible especially in the

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<sup>34</sup> *Waterwatch Scotland* (2010): Annual Report 2009 – 2010, p.22.

<sup>35</sup> See Australian Government – Productivity Commission (2011): Australia’s Urban Water Sector, p.510 with reference to *Waterwatch Scotland* (2010): Scope for Improvement in Retail Water Competition in Scotland, says Waterwatch Scotland.

<sup>36</sup> See *Waterwatch Scotland* (2010): Annual Report 2009 – 2010, p.22.

<sup>37</sup> See *Scottish Water* (2011): Annual Reports and Accounts 2010/11, p.16.

<sup>38</sup> See Australian Government – Productivity Commission (2011): Australia’s Urban Water Sector, p.508 with reference to *Waterwatch Scotland* (2010): The Introduction of Competition into the Scottish Water Industry: a Customer Perspective.

<sup>39</sup> *Bouttes, Jean-Paul;Leban, Raymond* (1995): Competition and regulation in Europe’s network industries from theoretical approach to sectorial application, p.127.

performance efficiency and the financial savings. Even if the savings would not be met full, it would be an outstanding result.

In contrast the main criticisms of the system lay in the implementation. Teething problems have to be resolved, because a competitive retail market is only working, if the customers are interested and informed. The leading position of Business Stream may be caused by less-informed end-users, the lack of willingness to switch or just a better performance of Business Stream. Even if the reasons cannot be resolved finally, it remains to note that the market share should be observed carefully over the next years.

The competitive retail market in the Scottish water sector enables the non-domestic customers to choose the services, which are tailored best to them. They are no longer bound to a 'one-size fits all' solution. Instead, they decide if they are willing to pay for the additional services or not. It will be interesting to see how the market develops and whether the competitive retail system will also be applied to the 2.4 million household customers in Scotland one day.

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