

Learning from International Best Practices

Participants 2012 exercise

Belgium

- Aquafin NV
- PIDPA
- Société Publique de la Gestion de l'Eau (SPGE)
- Société Wallonne des Eaux (SWDE)
- Vivaqua
- Vlaamse Maatschappij voor Watervoorziening (VMW)

Cyprus

- Water Board of Larnaca
- Water Board of Lemesos
- Water Board of Nicosia

Czech Republic

- Aqualia SmVaK Ostrava

Denmark

- Skanderborg forsyningsvirksomhed
- VCS Denmark

Estonia

- Tallinna Vesi

France

- Eau de Paris
- Le Service Technique de l'Eau et de l'Assainissement de Paris (STEA)

Germany

- Hamburg Wasser

Hungary

- Fővárosi Vízművek

Israel

- Mekorot

Italy

- Acea Ato 2
- Acque
- Acquedotto del Fiora
- GORI
- GEAL
- Publiacqua
- Società Metropolitana Acque Torino S.p.A. (SMAT)

The Netherlands

- Brabant Water
- Dunea
- Evides
- Oasen
- PWN Waterleidingbedrijf Noord-Holland
- Vitens
- Waterbedrijf Groningen
- Waterleidingmaatschappij Drenthe (WMD)
- Waterleiding Maatschappij Limburg (WML)
- Waternet

Norway

- Oslo kommune VAV

Poland

- Aquanet S.A.

Republic of Singapore

- Singapore's national water agency (PUB)

Russian Federation

- MVK Mosvodokanal

Spain

- Aqualia Vigo
- Canal de Isabel II Gestión

Switzerland

- ERZ Stadt Zurich
- Services Industriels de Genève (SIG)

United Kingdom

- Anglian Water
- Bristol Water
- Scottish Water
- Thames Water Utilities Limited
- Yorkshire Water

United States

- Charleston Water System

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Foreword

Over the past few years, the European Benchmarking Co-operation (EBC) has become a brand in professional benchmarking for water- & wastewater services. The programme attracts utilities from all over Europe and beyond that want to improve their services.

Key characteristics of the programme are:

- organised by the water industry, for the water industry;
- covering drinking water- & wastewater activities;
- extensive data validation and –reporting;
- large, international peer utility network to learn from.

In 2012, a record number of 50 utilities from 19 countries participated in EBC's sixth benchmarking exercise. 85 Utility representatives attended the annual benchmarking workshop, which was organised in Hamburg, Germany.

Continuous development

Each year, the network of participating utilities is growing further, which makes the programme more attractive to all. But the goal is not to grow as large as possible. It is more important to keep individual utilities with the programme for a longer period of time, since performance improvement is a continuous activity. This requires that the programme constantly develops to fulfil the needs and expectations of the participants and to introduce new elements that are relevant from internal- or external perspectives. For instance, in the 2012 exercise carbon footprint analysis has been added and special attention has been paid to asset management indicators.

In 2012 EBC executed a separate parallel benchmarking exercise for 13 water utilities in Romania, under an EBRD-funded, 2-years performance improvement project led by Aquanet/PWN. To secure proper data collection and –validation, an essential part of the benchmarking process, EBC could rely on local support of BDO Romania. In 2013, the project will include an additional group of 11 water utilities.

The Romanian project is organised in close co-operation with sister water association ARA and opens the door for EBC-aligned benchmarking in the larger Eastern European region.

As part of an EU-funded, 4-years performance improvement project led by Vitens-Evides International, EBC assists the Kenyan national water association WASPA and a group of 9 pilot utilities with the introduction of benchmarking and collective learning.

In 2012 EBC trained representatives of the pilot utilities in the benchmarking process and –methodology. A first benchmarking exercise has been executed and three task groups have started to support improvement actions in the areas of non-revenue water, service levels and cost recovery.

EBC Foundation

To strengthen the focus on EBC's core activity, utility performance improvement, and to secure independent operations, the EBC-partners have decided to organise the present benchmarking activities in a separate legal entity, the "EBC Foundation". Because the "Founding partners" of EBC are convinced of the importance and value of benchmarking for the water sector, they will continue their governing role in EBC. Final decision making about the new structure is expected in spring 2013.

Theo Schmitz,
Association of Dutch Water Companies (Vewin)

Carl-Emil Larsen,
Danish Water and Wastewater Association (DANVA)

Osmo Seppälä,
Finnish Water Utility Association (FIWA)

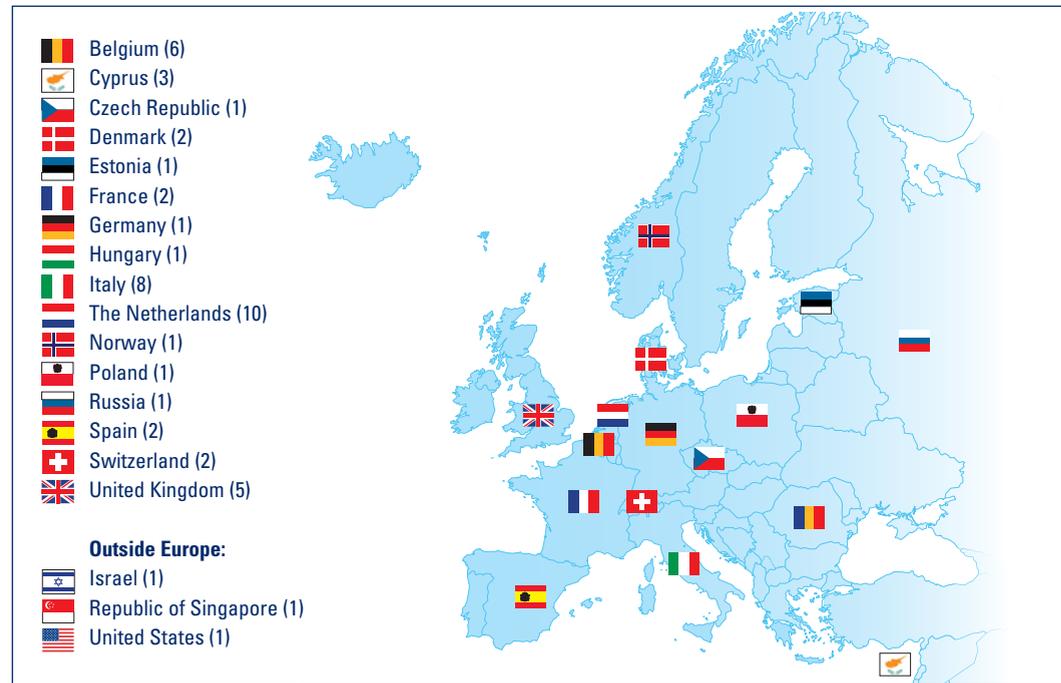
Einar Melheim,
Norwegian Water (Norsk Vann)

Introduction

EBC's international benchmarking exercise 2012

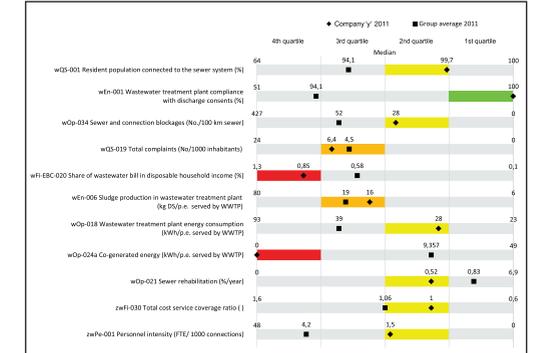
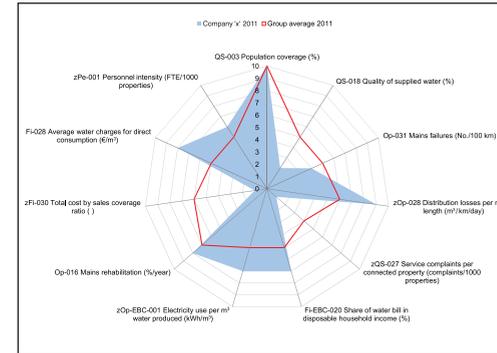
In 2012 the European Benchmarking Co-operation (EBC) welcomed 50 participants to its annual benchmarking exercise. 14 utilities joined the programme as new entrants. 19 countries were represented, of which three (Israel, Singapore, United States) outside Europe. This year's exercise analysed data concerning 2011. The project was coordinated by Vewin (Association of Dutch Water Companies) and supported by Accenture.

50 Participants from 19 countries



Early 2012, European water utilities were invited to join EBC's benchmarking exercise. Thirteen companies attended the orientation & training workshop in Copenhagen and eventually, 50 utilities decided to participate. The data collection started in June, using the dedicated EBC internet portal. After the initial collection phase, data were subjected to three rounds of analysis and correction, resulting in a validated data set used for the individual, confidential company reports and this public report.

Reporting the results to the participating utilities has been improved in three ways. First of all, the executive summary was extended to provide a better overview of the main findings. A "dashboard" was created to show a utility's performance in comparison to its



Dashboard components in executive summary

peers at a glance, to present performance trends over time and to show context information. On the content side, Asset Management was added as a focal performance area, and carbon footprint analysis was featured for the first time as a pilot.

Benchmarking workshop

On 8 and 9 November 2012, 85 delegates gathered in Hamburg for the annual EBC workshop. This two-day event provides participants with a platform where they can exchange practices and ideas. After discussion of the numerical results of the benchmarking exercise (performance assessment), twelve sessions were dedicated to best practices (performance improvement). Accenture hosted a gaming session, simulating risk based asset management. Hosting utility Hamburg Wasser organised a site visit to its Köhlbrandthoft wastewater treatment facility in the harbour area. After the workshop and the last corrections in the database, final reports were sent out mid-December. Participants can generate additional reports using tools available on www.waterbenchmark.org, tailoring the data set used to their specific needs.

The 2012 benchmarking workshop delegates in Hamburg



DRINKING WATER

A glass pitcher is tilted, pouring clear water into a glass. The water is captured in mid-pour, creating a dynamic splash and bubbles in the glass. The entire scene is set against a light blue background, and the lighting highlights the transparency and texture of the water and glass.

Drinking water

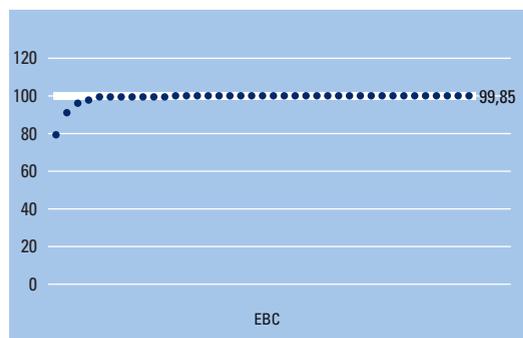
This section provides an overview of the performance assessment results for drinking water services. Data is compared on these services specifically; measures, costs and income of other services the participants may provide are excluded. In the EBC benchmark, the performance indicators are divided into five areas: water quality, reliability, service quality, sustainability and finance & efficiency. Additionally, specific attention is paid to indicators relevant to asset management. This public report shows a small sample of the 139 available performance indicators for the drinking water service to illustrate some key findings. As the group of participating companies in the 2012 exercise is different from that in 2011, group averages cannot be compared with those of the previous year. In the detailed company reports, however, companies can track changes both in their own and in their peers' performance.

Water quality test conformance is high

Water quality is of paramount importance to both customers and utilities alike. People and businesses need clean, safe water, and for utility management water quality is a key element of the service. To assess participants' performance in this area, EBC measures the percentage of quality tests in compliance with national regulatory standards. As these standards differ between countries, test compliance does not allow an absolute comparison of water quality. This is partially mitigated by the fact that European national standards are based on the European Drinking Water Directive.

Most companies score close to 100% compliance. It is worth noting that a non-compliant test can be caused by a non-hazardous flaw. In addition, many safety standards contain a safety margin, so that a case of non-compliance does not necessarily mean public health is at risk. All in all, water quality is very high across the EBC group.

Figure 1: Quality of supplied water (%)

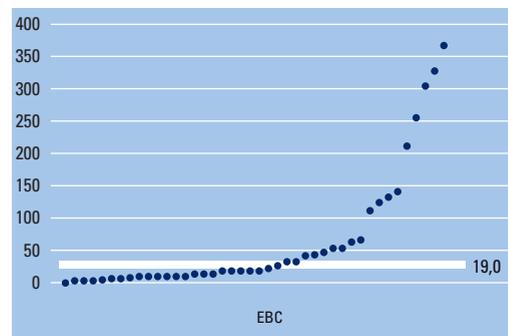


According to the programme's Code of Conduct performance comparisons in this public report do not show participants' names. Note that the number of data points vary per figure, because not all participating utilities have submitted a full dataset.

Reliability varies widely

In addition to water quality, reliability is a key element of a water utility's service. Clean, safe water needs to be available to people and businesses all the time. EBC uses mains failures as a measure of reliability. Mains failures are breaks and leakages of mains pipes, valves and couplings, leading to interruption or low-pressure supply. Results vary widely, with a median value of 19 failures per 100 km of mains. Factors influencing mains failure rates include network condition, soil composition, traffic load and water pressure.

Figure 2: Mains failures (No./100km)



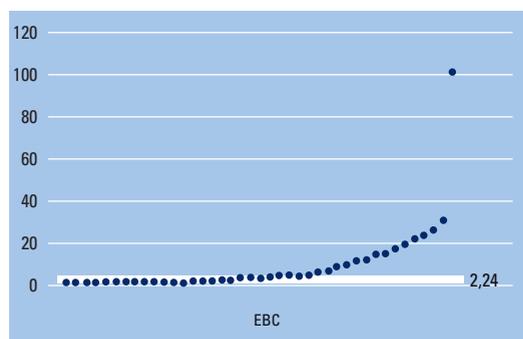
Somewhat paradoxically, improving monitoring may (at first) cause an increase in mains failures, as not all failures are registered today. Failures may also occur without the customer noticing. To account for this, EBC looks at distribution losses and customer minutes lost in addition to mains failures. Combining these indicators allows for a balanced view of reliability performance.

Service Quality good, with quite some room for improvement for some

EBC measures service quality using data on the number of complaints submitted by utilities' customers. Figure 3 shows the number of complaints related to the actual supply of drinking water, including water pressure, (medium to long term) continuity, water quality and (short term) interruptions. Complaints on billing are measured but not taken into account here. The median number of complaints per 1000 properties is 2, which indicates a good level.

In recent years, a new, public channel to submit complaints has emerged. In addition to direct contact with their utility, customers today have various ways to voice their concerns to a large audience with very little effort using social media. Utilities are catching up on this, and are using these newly available instruments to better inform their customers. Thus, mutual understanding is facilitated and formal complaints may be prevented.

Figure 3: Service complaints per connected property (complaints/1000 properties)



Sustainability

Sustainability is a broad concept that can be approached in various ways. EBC applies the widely recognised Triple Bottom Line approach to assess participants' performance on sustainability. This approach distinguishes social, environmental and economic sustainability.

Social sustainability: households spend around 0,6% of disposable income on water services

Socially, water utilities have a heavy responsibility to their customers. Water is an indispensable resource, and customers usually have no viable alternatives to their local supplier. This unilateral reliance leaves it to the utility to make sure its product is as affordable as possible. Affordability is measured by calculating the share of disposable income an average household spends on its drinking water bills. Ranging from 0,24 % to 1,14%, most companies are fairly closely packed around the 0,6% median.

Environmental sustainability: large variations in electricity use

There are multiple aspects to environmental sustainability for a water company. It abstracts, treats and distributes a scarce resource, generates treatment residues and uses energy for these processes. Some of that energy may, in turn, be recovered, for instance through the use of turbines and reverse pumps.

Figure 4: Share of water bill in disposable household income (%)

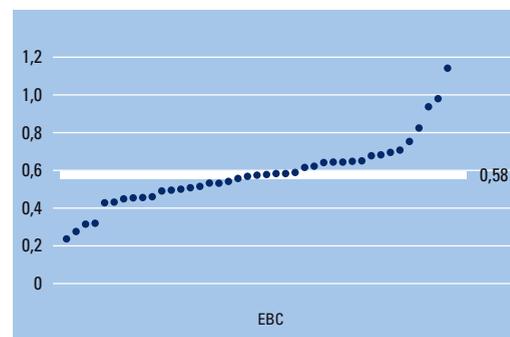
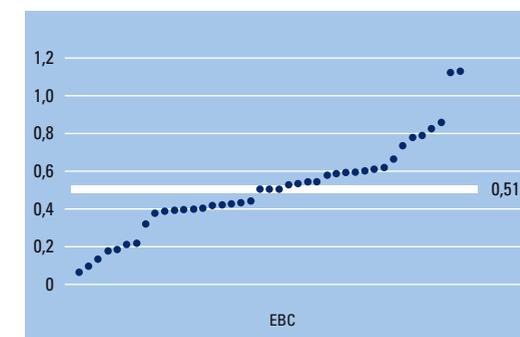


Figure 5: Electricity use per m³ water produced (kWh/m³)



Losses are unavoidable in the drinking water system. Resource efficiency and environmental concerns dictate that these should be minimised. In addition, losses are indicative for the condition of a utility's infrastructure. For this year's EBC group, inefficiency of use of water resources – the percentage of extracted and imported water that doesn't end up on the customer's water bill – is between 4% and 56%, with a median of 16%. This indicates ample scope for improvement, although mitigating factors apply to some companies because of their operating environment.

Electricity use is influenced by water resources locations, service area geography and treatment processes. Pumps are the most voracious consumers of electricity, which makes their efficiency an important factor in the reduction of electricity use. Delivering 1 m³ of drinking water to the customer takes this year's participants a median of 0,51 kWh.

This year's edition of the EBC benchmark featured a pilot on carbon footprint analysis. First results are in line with recent other investigations. In the next exercise EBC will continue the analysis with some methodological refinements.

Economic sustainability

While making sure that customers can access its indispensable product and looking after the environment, water utilities also need to make sure their activities are economically sustainable. In very basic terms this means having sales revenues cover total costs by a ratio of one or more. Over three-quarters of the EBC group has a total cost coverage ratio of one or more. This may indicate room for reduction of charges to customers, large future investments under preparation, or other considerations.

Water supply is a capital intensive industry sector and future investments have a great impact on the costs of the service. Monitoring, maintenance and replacement of these assets is an important factor in a utility's sustained financial health. Network age is used as an indicator of future investment needs (keeping in mind that applied materials, soil condition, water pressure etc. should be taken into account). The median network age of about 38 years means that the participants' networks are about halfway along their technical lifespan.

Figure 6: Total cost by sales coverage ratio ()

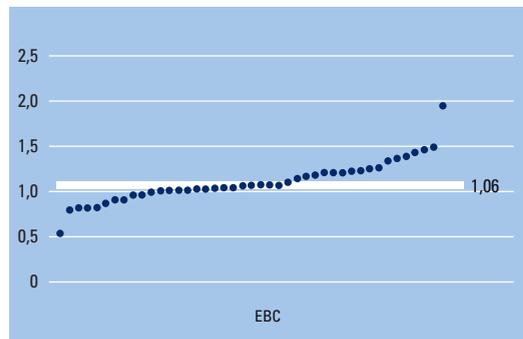
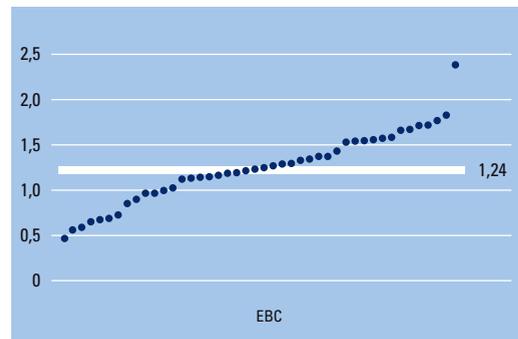


Figure 7: Average water charges for direct consumption (€/m³)



Finance & Efficiency

The EBC performance assessment framework contains an extensive set of indicators on finance and efficiency. In light of utilities' commitment to provide water of the highest possible quality at the lowest possible price, water charges are an important performance indicator. Average water charges for direct consumption are calculated by dividing total direct revenues by sold volume. Many utilities have a tariff structure consisting of a fixed

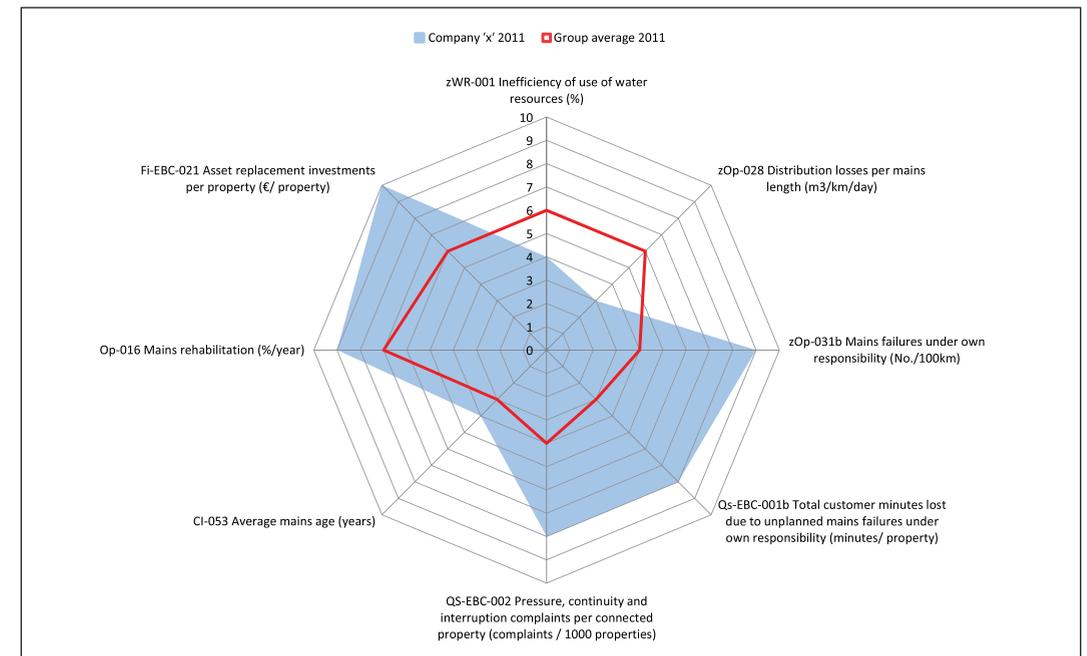
amount per year (depending on the size/capacity of the connection) and a variable rate per unit sold. As a result the price per m³ a household actually pays depends on its consumption. The median price of water in this year's EBC group is €1,25 per m³.

On the efficiency side, personnel intensity is an important indicator within the EBC framework. It is measured as the number of full-time employees per 1000 properties. All scores are computed using a 40 hour full-time working week. The median score is about 0,8 FTE per 1000 properties.

Asset management

The 2012 EBC benchmark introduced a specific section on asset management. Indicators relevant to business aspects associated with asset management performance were brought together in a so-called spider graph. This type of graph provides an at-a-glance overview of a company's performance compared to its peers; the larger the blue area, the better the performance. The red line in the example graph below represents a virtual 'average company'.

Asset management spider graph (example)



WASTEWATER



Blockages are the primary cause for complaints. One explanation for this is the fact that blockage issues arise more often than, for instance, issues related to rodents. In addition, not all utilities are able to monitor all of their sewers. Therefore, customers may detect a blockage before the utility does.

Sustainability

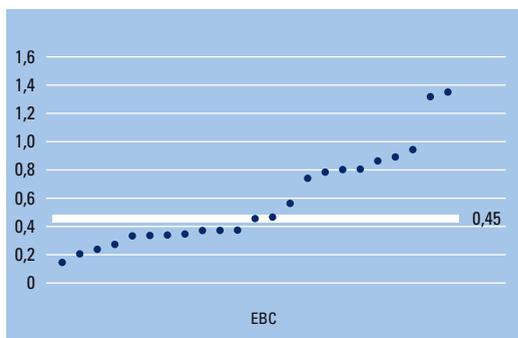
Like drinking water services, wastewater services are benchmarked for sustainability using the Triple Bottom Line approach. This means taking into account social, environmental and economic sustainability.

Social sustainability:

households spend around 0,45% of disposable income on wastewater services

Measuring the percentage of disposable income households tend to spend on wastewater services gives us a good idea of the affordability of those services. Differences in wealth are accounted for. The median value for this indicator is 0,45%. Differences are quite pronounced, but no utility exceeds 1,34% of disposable income.

Figure 11: Share of wastewater bill in disposable household income (%)



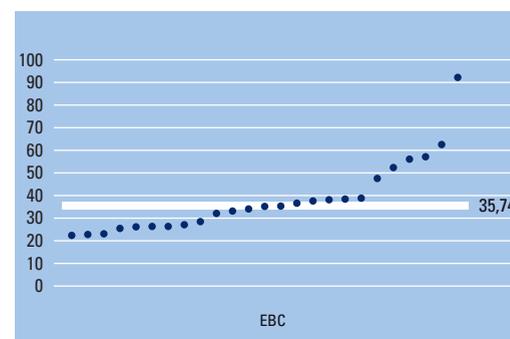
Environmental sustainability

Energy consumption primarily occurs in treatment plants, as the collection of sewage tends to be mostly gravitational. Differences in energy consumption can be due to technical aspects of treatment plants, particularities of discharge consents, and the nature and habits

of customers. The majority of participants is clustered fairly tightly around the 36 kWh per p.e. served median.

The sludge resulting from wastewater treatment processes can be used to generate energy. Though not suitable for all facilities everywhere, cogenerating energy is a good way to offset energy use to some extent. Most EBC participants use self-produced biogas to generate electricity. Sixteen out of 29 participants operating treatment plants have reported co-generated energy, for a median of 8,5 kWh per p.e. served.

Figure 12: Wastewater treatment plant energy consumption (kWh/p.e. served)



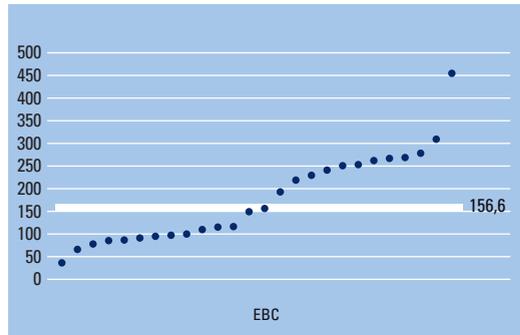
Economic sustainability

The most important measure for economic sustainability in EBC's assessment model is the total cost by sales coverage ratio. With this ratio, one can identify if a utility is able to recover its costs from its sales revenues. These revenues consist of all charges to the customers for the collection, transport and treatment of wastewater. A ratio score below 1 indicates that the costs are larger than the sales revenues and as a result the service is not economically sustainable without subsidies or other sources of revenue. When a company has a score above 1, it generates a surplus that can be used for future investments or dividend payments to its shareholders. The median cost service coverage ratio for wastewater services is 1,07.

Finance & Efficiency

The average amount spent on sewage services per connected property varies widely between EBC participants. The highest charges registered are over ten times higher than the lowest. The picture is similar when charges are corrected for purchasing power parity, which corresponds with the distribution we see in affordability. Cost reduction (and, consequently, lower charges) are an important goal for almost all wastewater utilities. The EBC results for average charges suggest that exchange of best practices could be of great value in achieving this objective.

Figure 13: Average charges per connected property (€/property)



GOOD PRACTICES



Good practices snapshots

aqualia Vigo (Spain): Curbing the carbon footprint



Mariano Blanco
Director International Customer Care

aqualia is a global player in the management of the integrated water cycle. It currently develops its activities in 17 countries within Europe, Asia, Africa and America, and is market leader in Spain. The third water management company in the world, aqualia currently serves more than 30 million people.

Mariano Blanco: "aqualia has been participating in the EBC benchmarking programme for the last three years, as a way to increase our efficiency and to help the company to achieve high competitiveness in the global market".

"This year aqualia has participated with two high-quality utilities in Europe, SmVaK (Czech operator) and aqualia-Vigo (Spanish operator). In both cases the results of the benchmarking activities pointed out the best practices of their services and also some new projects to implement and improve".

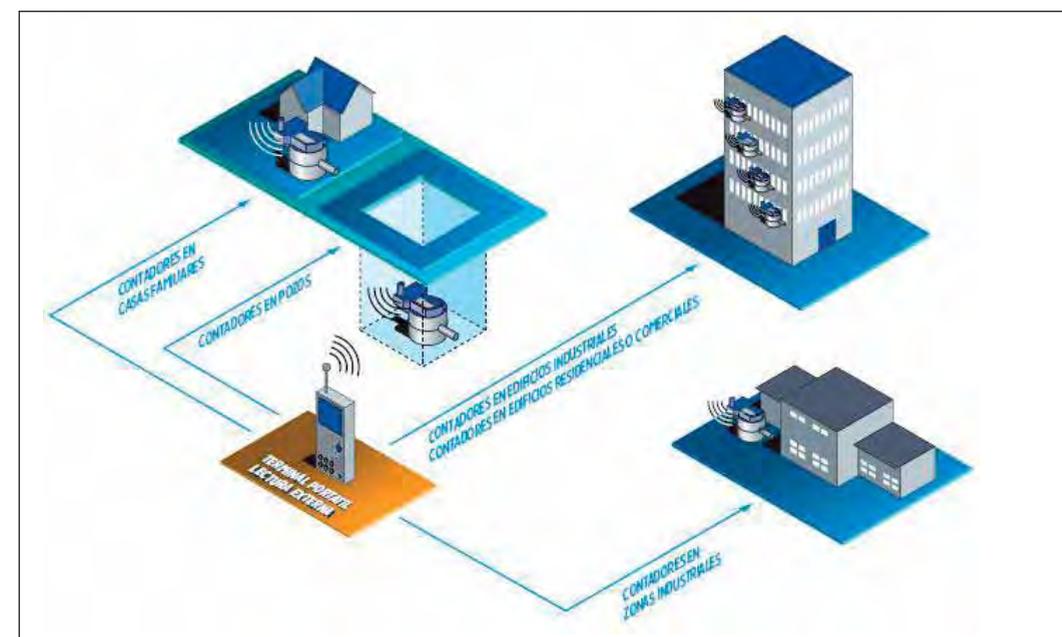
"Regarding our participation this year, we decided to share our experience in "curbing the carbon footprint in the management of the water supply service". aqualia applies AMR technology (Automatic Metering Reading) to contribute to improving network operations and the service, in particular to reduce the economic and environmental costs, with a significant decrease in CO2 emissions".

"Today, the new regulatory, social and political framework is driving the implementation of IT systems in the field of water management. This implementation is poised to become the formula that will boost efficiency and service levels, adding value to the sustainable operation of this scarce resource, thus benefiting the user, the operator and the environment".

"Within the Spanish national regulatory context, the Technical Building Code prescribes that water meters must be enabled for remote-reading. On the other hand, the application of these systems is one of the means promoted by the "Spanish Sustainable Mobility Strategy", to curb the carbon footprint. Likewise, at a European level, the New Water Framework Directive (Directive 2008/32/EC) establishes the application of new technologies as a means to achieve the principal goal: "the sustainable and efficient management of water resources".

At the Hamburg workshop aqualia presented a specific project in Spain, where it achieved the following main goals after full implementation: improving the network efficiency up to 85%, reducing 1,5 Million m³ of water to buy, resulting in 215.000 €/year of savings and a reduction of 340 tons of CO₂-emissions per year related to energy consumption, transport activities and chemical products manufacturing.

aqualia expects to participate next year again and to continue sharing new experiences with the other participants!



Canal de Isabel II Gestión (Spain): Reducing non revenue water



Javier Fernandez
Deputy director Telecontrol

Canal de Isabel II Gestión S.A. provides drinking and waste water services to more than 6 million people in Madrid's region. Its main concern is to guarantee future water supply as well as to protect and improve the environment.

Javier Fernandez explains why the company is interested in participating in EBC's benchmarking programme: "The company gathers and processes a huge amount of information every day, which is summed up in a set of performance indicators. We make important decisions based on these values, and monitor their evolution, thus providing feedback for continuous improvement. Nevertheless, in order to assign the more appropriate resources we need to find an answer to the following question for each indicator: how far are we from the best achievable value? Benchmarking activities become, therefore, essential to determine the adequate targets. The workshop is particularly useful, since it consists of more than just giving the opportunity to compare to one another: it provides the best environment to exchange information and ideas amongst participants. Taking part in it has been a very valuable experience, and I hope that all the attendees feel the same about our enthusiasm. We are really looking forward to a new edition".

"Water is a scarce resource in the region of Madrid. Moreover, rainfall is quite irregular, so the company has to make a great effort in providing efficient resource management mechanisms. As we say in our public awareness programmes, "every drop counts". That's why we are particularly concerned with reducing non-revenue water (NRW). A great effort has been recently devoted to determine the breakdown of NRW into four different aspects: under-registration of water meters, non-metered connections, leakage and fraud. Our studies have led to the conclusion that the first factor accounts for 55% of the total amount. Improving meter performance has hence become a subject of a paramount importance for the company. The same studies point out that replacing meters with over twelve years of operation should reduce this amount significantly. Therefore, preventive replacement is the

main action that is being carried out to achieve this goal. It has been undertaken for two years, but the results have not been as good as expected so far. There has been a significant improvement in under-registration for small size meters, but it has been compensated by a slight decrease in under-registration of larger size meters. Taking into account that most of the volume is billed to these larger sizes, and that the replacement costs do not balance the improvement in smaller size meters, the overall result is not positive. Several conclusions could yield from this experience:

- Under-metering in the company is much smaller than expected. There is no particular reason to support this, since all the estimates of the other components of the NRW breakdown seem to match quite well.
- The estimation of the under-metering volume is fairly good, but it is not easily recoverable due to our residential customer demand pattern in relation to meter sizes.
- The meter replacement policy carried out was not adequate, and must be reviewed.

All the data related to meter replacement is currently being analysed in order to determine which explanation is the most suitable".

"Sharing this information in the Hamburg workshop has been very useful, since it has allowed us to know how other companies are dealing with this problem and how the legal framework is like in other countries. This will help us to take advantage of these experiences and apply them in order to know how much we can reduce our NRW level and how to achieve it".



Pidpa (Belgium): Optimising revenue collection



Kristien Keppens
Front- and Back Office manager

Most of Pidpa's revenues are generated through water bills paid by its customers. So if Pidpa wants to increase revenues, the first logical step seems to be to increase the amount presented on its bills. Through the water bill Pidpa charges both drinking water and waste water costs. Apart from a yearly fixed charge, these charges are m³ driven, which means that the consumption of the customer mainly determines his bill.

Consumption has been declining for years now, since customers become aware of the total cost of water and take action to minimize consumption of drinking water. The other factor is the price Pidpa charges per m³. Prices for drinking water are regulated and Pidpa has little impact on prices for wastewater. In the end, impact on revenues generated from water bills is limited. Then how to maximize revenues? By collecting as much as possible of what has been billed!

Collection: the challenges

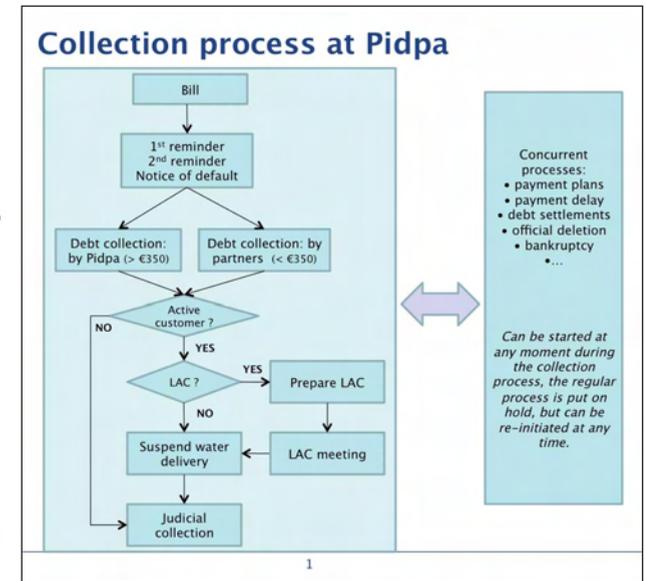
In order to bridge the gap between billed and collected, Pidpa needs a strong collection process. This is the big challenge. The overall economic situation created a customer base with a rising number of bad payers, bankruptcies, debt settlements and in some cases even fraud, theft and illegal consumption. All this while regulation becomes stricter: mandatory dunning steps are formulated, customers rights regarding access to drinking water are protected, social price reductions are installed.

Collection process at Pidpa

Taking into account these evolutions Pidpa has set some main principles for its collection process.

1. Low threshold for customers: Pidpa operates a free of charge phone number for all customers and allows free of charge payment plans.
2. Well organised and (whenever possible) strongly automated process: strict timing for each step in the collection process and each next step (incl. expected cost) is communicated to the customer in advance.

3. First reminder free of charge when "first time late".
4. No solidarity: customers pay for their own collection costs.
5. Strict procedures are followed (LAC = local advisory commission) before suspending water supply at residential customers.
6. House visits by Pidpa employees before LAC (personal approach): target = agreement on (partial) payment + avoiding suspension of water supply.
7. Aiming at 'partnership' with social welfare: win-win-win situation.
8. Outsourced specific steps in the dunning process: when 'pressure' from external party is needed, for time-intensive actions (call actions - visits), within a clear time frame (3 months).
9. All available external channels are in place: collection agency, bailiff, and lawyer (each partner has its strong points).



All principles are there for the same goal: make customers pay, but consider the fact that they will remain customers after all. Guide the customer to find a solution so that he can continue paying his water bills in the long term.

Organising the collection process is one thing, managing it is another. Pidpa manages its processes through the Balanced Scorecard where performance measurements are registered, followed, discussed and acted upon.

Looking forward

Pidpa will further adapt its collection process to upcoming evolutions. Regulation will become even stronger and procedures for suspension of residential water supply will become stricter. Pidpa plans on optimizing the current collection process for professional customers and further outsourcing of dunning steps will be considered.

PARTICIPANTS EXPERIENCES



Participants' experiences

Acea Group (Italy)



Ercole De Luca
Energy manager water division

EBC welcomed seven new participants from Italy: Acea ATO2 (Rome, Lazio), Acque (Pisa, Tuscany), Acquedotto del Fiora (Grosseto & Siena, Tuscany), G.O.R.I.(Sarnese Vesuviano, Campania), GEAL (Lucca), Umbra Acque (Perugia, Umbria) and Publiacqua (Florence, Tuscany). They are all members of the Acea group. We asked Ercole De Luca about Acea, its reasons for joining EBC and its first experiences.

"Acea is one of the major public utilities in Italy; our two main activities are energy and water. We handle 57.000 km of water grids and over 30.000 km of sewage grids in Lazio, Campania, Toscana and Umbria, providing integrated water services to more than 8 million residents. Acea also offers various water-related services in Peru, Colombia and the Dominican Republic. In energy, Acea is active in production and distribution, renewables, energy production from waste, energy sales and more. Exchanging competences between water and energy businesses, Acea Group is able to offer a wide and complete range of services to its customers".

"When other operators told us about EBC, we decided to join for various reasons. First and foremost, we wanted to know where we stand compared to our peers and, indeed, competitors. Identifying areas of strength helps us to appreciate our own achievements and, more importantly, finding weaknesses guides us in our efforts to offer better services at lower cost. All in all, the results of the EBC exercise are an important instrument in Acea's strategy. Furthermore we realised that the extensive data collection required by the programme could give us a better understanding of the determinants of our business".

"Acea's people involved in the exercise reported that EBC's work leads in the expected direction. In addition, the deep details of all the aspects of the business they had to analyse to answer to the EBC questions were a great opportunity to focus on items that we tend to overlook. For example, the detailed sub-division of total costs and human resources under the several processes analysed, both for drinking and waste water, helped us to identify specific improvement areas. In particular, it was interesting to compare with similar utilities, for each process area, the efficiency of the in-house/outsourced services mix."

Charleston Water System (United States) Jane Byrne & Linda Hans



2012 marked Charleston Water System's first participation in the EBC benchmarking programme. CWS, based in Charleston, South Carolina, provides water to ± 400.000 people and sewer services to 180.000 people. As an American company, CWS stands out in a predominantly European programme. We spoke with Jane Byrne and Linda Hans and asked them about their motives for joining EBC.

"It all started with the 2007 strategic plan. In it, our new CEO stated his ambition for CWS to be worthy of winning the South Carolina Governor's Quality Award by 2012. Emphasising the words worthy of, actually collecting the crystal trophy was not the main goal. Rather, the plan was about embarking on a journey of continuous improvement."

"Data and Culture are what you could call two of the guiding principles on our journey – and they are more closely intertwined than one might think. As everyone involved with CWS was included in the new strategy, a focus on data has helped to improve both measurability and accountability. The Governor's award is explicitly data driven, and by 2011, CWS was too. One year ahead of schedule, CWS was not just worthy of winning, but won, the first utility to do so. Next step: contending for the prestigious Malcolm Baldrige National Quality Award by 2017. To keep improving, we needed references and ideas. Our search for comprehensive, sustainable benchmarking programmes in the US produced few results, so we were happy to be able to join EBC. A lot of our associates are involved in the benchmarking process, and the entire company is aware of our participation in the programme."

"With data based decision making and best practice implementation such a strong focus of the programme, participation in the EBC program has presented us with an excellent source to work on some of the specific opportunities for improvement that we have identified within CWS. We were struck by the openness during the workshop: everyone's here to share – and for us, the workshop is the most important part. It would be helpful to get a clearer picture of who our peers are. Other than that, we have already gotten more out of this exercise than expected: benchmarking, best practices, and networking."

NWWBI (Canada)

David Main (AECOM)



David Main
project manager NWWBI

Another North American made his way across the Atlantic this year to attend the EBC workshop in Hamburg. David Main serves as project manager for the Canadian National Water and Wastewater Benchmarking Initiative (NWWBI). He has been involved in the project since its inception, some fifteen years ago. He agreed to share his thoughts on and experiences with benchmarking, in Canada and elsewhere.

"In 1997, a group of four municipal water and wastewater utilities, AECOM Canada, Inc., and the National Research Council of Canada met with the purpose of looking for a framework to answer four seemingly simple questions that had been posed by each of the utility's boards:

- How well are we doing?
- How do we compare with similar organisations?
- Are we getting value for money?
- How can we get better at what we do?"

"Beyond their own figures and evidence that was purely anecdotal in nature, the public utilities lacked any common performance indicator measurements or statistic beyond what was required for regulatory conformance. At that time, privatisation was being debated as a strategy for more cost effective services, but again it was impossible to determine if privatisation would lead to less expensive water services due to lack of supporting data. Privatisation of the public water sector was generally unpopular with the public, but the argument of performance improvement seemed compelling to decision makers. Benchmarking enabled participants to put their performance in perspective".

"We spent two years developing KPI's specific to the water industry. In 2000, we were ready to start benchmarking. Over the years, enrolment increased to up to 45 utilities from all over the country. Their scales differ, but they are all 100% public, and they operate in the same regulatory environment. Participation is voluntary and, as a rule, fully transparent. We've seen this attracts progressive, open utilities. They have embraced benchmarking, as it allows

them to manage their business proactively. Indeed, our KPI's have found their way into reports and boardrooms".

"I've been coming to the EBC workshops for some time now. Methodologically, EBC and NWWBI are almost identical. This allows us to compare our results every two years to look for common trends. The main difference I see has to do with transparency. Anonymity is a limiting factor for best practice sharing. In Canada, there are no substantial barriers. At the end of the day, best practices are the main prize in benchmarking, so the more transparent, the better".

"Benchmarking provides utilities with a solid set of reliable numbers they can show to their stakeholders. For both organisers and participants, it's essential to stay on top of data quality. As organisers, we need to keep explaining how PI's connect, and to help utilities interpret benchmark results. That way, participants can confidently answer the question: 'How are we doing?'."

Endnotes

- 1) **Share of (waste)water bill in disposable household income** is the percentage that the average (waste)water charges per property represents of the calculated household disposable income. The household disposable income is the amount of income left to a household after taxes have been paid, available for spending and saving. EBC's source for the calculation of household disposable income is Eurostat. It is calculated as the product of the mean equivalised net income (household income per adult equivalent) and the average number of adult equivalents per household.
- 2) **Average water charges** in EBC are calculated by dividing a company's revenues (direct revenues, residential, non-residential, or revenues from exported water), by the number of m³ of authorized consumption, connected properties, or exported water (direct, residential or non-residential respectively).
- 3) **The total costs** are the sum of capital and running costs. Capital costs are defined as net interest plus depreciation, while running costs include personnel costs plus operational costs (external services, energy costs, purchased merchandises, leasing and rentals, levies and fees, exceptional earnings/losses, other operating costs). Subsidies that support operational costs are a part of exceptional earnings/losses.
- 4) **Average wastewater charges** in EBC are calculated by dividing a company's revenue (fees for collecting, transporting and treating the wastewater), by the number of properties connected to the sewer system managed by the utility (in apartment buildings, each household/property is counted separately).

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EBC

The European Benchmarking Co-operation (EBC)

The European Benchmarking Co-operation (EBC) is a not-for-profit partnership of four European national water associations: DANVA (DK), FIWA (FIN), Norsk Vann (N) and Vewin (NL), that targets at improving water services (water & wastewater) through benchmarking. On behalf of the partners, Vewin coordinates the programme. For Germany, aquabench GmbH act as a regional EBC-hub. The University of Graz holds the same position for Austria.

After a pilot in 2005/2006, EBC has annually organised benchmarking exercises since 2007. Participation is on a voluntary basis. The EBC programme is fully aligned with the IWA & AWWA benchmarking framework and applies the IWA Performance Indicator System. This standardisation allows exchanges between different programmes.

What does EBC's benchmarking programme offer?

EBC offers a learning-orientated utility improvement programme, consisting of two consecutive steps: performance assessment and performance improvement. To serve both large and small utilities, experienced and less experienced ones, EBC has developed a Performance Assessment Model with three different levels of detail: basic, standard and advanced. While at the basic level only elementary statistics and performance indicators are investigated, the advanced level offers quite detailed indicators for deeper analysis. Participants can choose the benchmarking level that best matches their aspirations and availability of internal information. EBC analyses five key performance areas, to provide a balanced view on utilities' performance:

- Water quality
- Reliability
- Service quality
- Sustainability
- Finance & Efficiency

Next to these key areas, EBC pays specific attention to the asset management area.

To secure the high-quality standard of the programme, the EBC benchmarking team and the participating utilities closely work together on data collection, data validation and reporting. In the Performance Improvement stage, utility representatives meet their peers in the annual benchmarking workshop where they exchange knowledge and best practices in technology, management and operations. EBC encourages utilities to prepare their own Performance Improvement Plan for the implementation of improvement actions.

