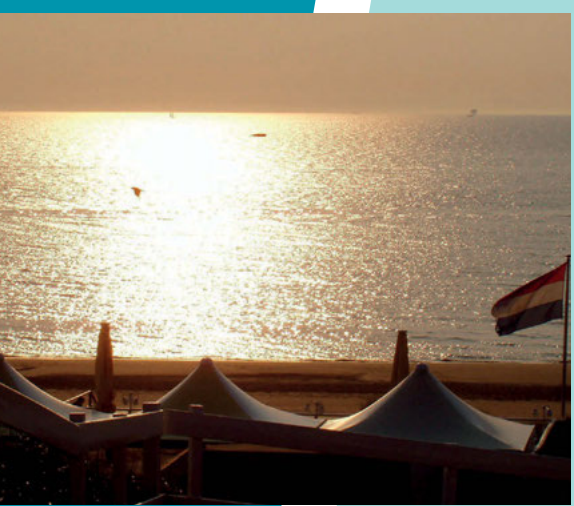
Yearbook 2014/2015



EUROPEAN WATER ASSOCIATION

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Yearbook 2014/2015

EUROPEAN WATER ASSOCIATION

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Dr. Werner Flögl

EWA President 2013 – 2015

Welcome to the 2014/2015 Yearbook of EWA, the European Water Association!

It is a great pleasure to present the new edition. It shall inform you about the EWA organisation, our National Member Associations (NMA) and their activities and also – in the year of "Water and Energy" - about interesting comments and views by the Commissioner for Environment Potočnik and Member of European Parliament (MEP) Dr. Richard Seeber as well as interesting technical articles. The Yearbook also contains contributions by Nicola Notaro, Deputy Head of Water Unit at the Directorate for Quality of Life, Water & Air at the DG Environment of the European Commission as well as Dr. Helmut Blöch, former deputy head of the Water Unit at DG Environment. Information about corporate members of EWA and EWA cooperation organizations complete this edition of EWA Yearbook.

The European Water Association EWA is a pan-European, non-governmental, non-profit technical and scientific umbrella organization of National Member Associations bringing together all professionals involved in the water cycle – a voice of water in Europe. EWA is acting as a platform and turntable for discussion, exchange and transfer of information and know how in the European water landscape on a high technical and scientific level, thus contributing to sustainable water management and development of water related European policies. The knowledges about water related issues in most of the European countries, implemented into EWA by our National Member Associations, and about the targets of EU-Water policies by close contact to the European Commission, the DG Environment and the European Parliament, strengthen EWA's platform and turntable function for information and expertise exchange.

This year the most important role of water in EU-policies has been expressed by the first ever successful European Citizens' Initiative "Right 2 Water" calling on the Commission to exclude water supply and management of water resources from internal market rules and liberalisation and to increase its efforts to achieve universal access to water and sanitation around the world. As a direct result of public concern, the provision of water service was excluded from the directive on the awarding of concession contracts and the Commission committed itself to a multi-step new action program in areas that are of direct relevance to the initiative and its goals.

This year also brings the 100 years anniversary of the invention of activated sludge process, one of the main pillars of waste water treatment. This anniversary is of special importance to EWA as since its inception 33 years ago – initially entitled the European Water Pollution Control Association – the association has been strongly involved in the field of waste water treatment.

This year is also a year of European elections. Regarding to these elections EWA has issued a statement calling for urgent action on significant topics for the water management to be part of the Brussels Water Agenda for the future. More than 50,000 water experts in our National Member Associations, covering the whole water cycle, are prepared to contribute to improve and solve deficiencies which have been recognised. I would like to express my sincere thanks to all our National Member Associations and their experts for all the voluntary work they are doing, our Council Members, Standing Committee Members and Management Committee Members as well as our EWA team around Secretary General Johannes Lohaus, Vice President Károly Kovács and our Past President Pertti Seuna for their enormous efforts to our European Water

Association and on safe and clean water for all Europe!

Werner Flögl, EWA President

March 2014

Content

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Cooperations Organizations

THE EUROPEAN WATER ASSOCIATION
Clean Water for Europe

The European Water Association (EWA) is an independent non-governmental and non-profit organization promoting the sustainable and improved management of the total water cycle and hence the environment as a whole.

It is one of the major professional associations in Europe that covers the whole water cycle, wastewater as well as drinking water and water and wastewater treatment related wastes. With member associations from nearly all European Countries, EWA includes most of the current European Union Member States as well as Norway and Switzerland. Today, EWA consists of 23 European leading professional organisations in their respective countries, each representing professionals and technicians for water and wastewater utilities, academics, consultants and contractors as non-governmental and well as a growing number of corporate member firms and enterprises. Thus EWA represents about 50,000 professional individuals working in the broad field of water and environmental management.

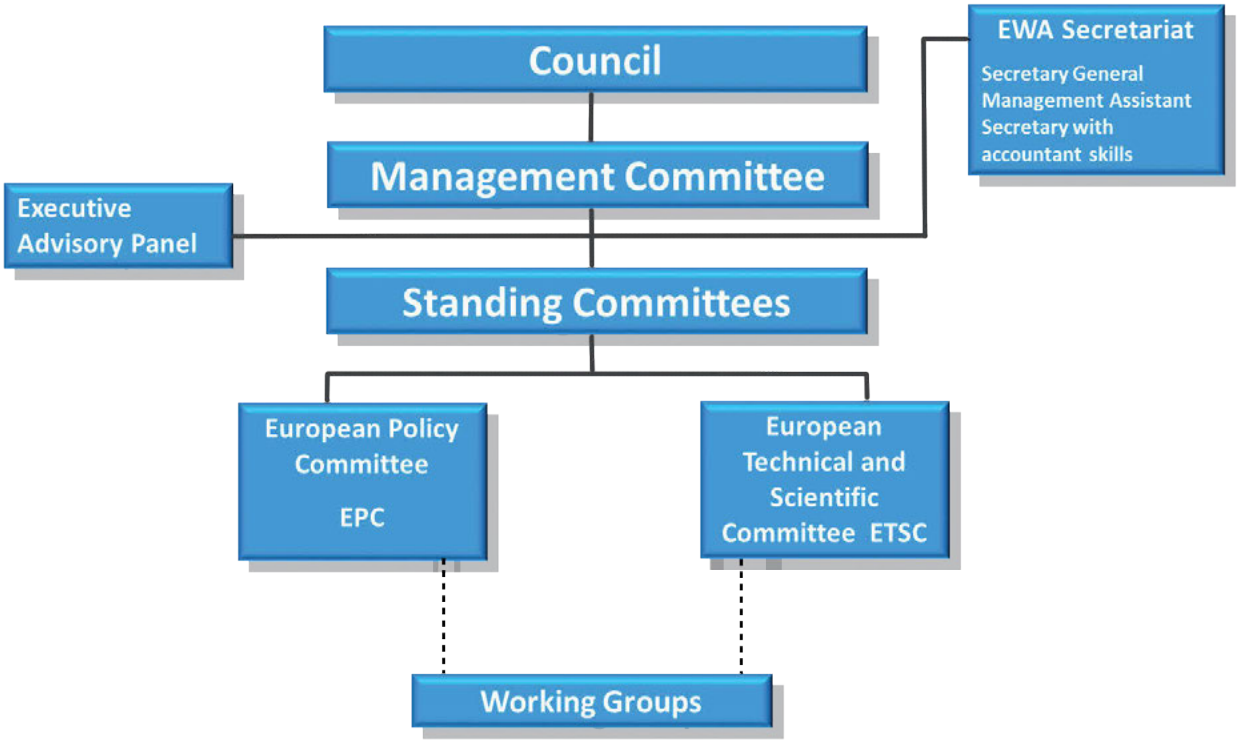
Organisation and Structure

The highest authority of the EWA is the Council – it has the executive power of decision. Each member association (23) is represented on the Council and these representatives meet annually to discuss and plan the activities of the association. The smaller Management Committee has responsibility for developing policy and is in charge of the daily work of the association, supported by the Secretariat. The Association is represented by the President, who chairs the Council and the Management Committee. The Secretary General executes the day-to-day operations of the Association. In addition, Standing Committees and Working Groups support the work of the Association.

The EWA Standing Committees

From the very beginning the Association has laid emphasis on the exchange of information and knowledge between professional experts. Through this exchange of knowledge, the EWA contributes to a sustainable water management: safe water supply and the protection of water and the environment. This was achieved by the organisation of numerous conferences and workshops taking place all over Europe and covering a very broad range of water related topics such as European legislation (themed areas such as Water Framework Directive, Groundwater Directive, Sewage Sludge Directive etc.), technical questions like for example the significance of small wastewater treatment plants in rural areas, or scientific conferences, like Waters in Protected Areas and other integrated approaches. The European Water Association organizes conferences and symposia at regular intervals, on events such as the International Trade Fair (IFAT) in Munich, as well as its own annual EWA Brussels conference. An increase in the number of members from Central and Eastern Europe (accession countries), has raised the interest for events dealing with water protection issues.

All this work is achieved through the different Committees and Working Groups that were established and which are adapting their scope according to the needs. They are based on voluntary work of experts coming from the different National Member Associations and working together on various subjects of current interest in the water and environmental field.



European Policy Committee (EPC)

The committee follows the work of the European Commission and arranges regular meetings with officials in the Commission, responsible for activities of relevance to water management. The committee gives comments and advice to official European institutions on behalf of its members. The EWA is attending meetings of the Strategic Co-ordination Group under the WFD Common Implementation Strategy. Furthermore the EWA is in close contact with other European associations and institutions.

The objectives and responsibilities of the European Policy Committee (EPC), under the guidance of the governing bodies of the European Water Association, and within its rules of procedure, are the following:

- Organise and coordinate relationships of EWA with European level bodies, and especially with bodies of the European Union;
- Facilitate and create the necessary and useful flows of information amongst the persons and groups representing EWA towards European level bodies, as well as between the former and the National Associations (NA), members of EWA;
- Identify emerging issues and important trends in water related European policies and issues, which are of interest to EWA and its members, in order to allow EWA to anticipate future changes and to contribute efficiently to European policy development;
- In consequence, and in conjunction with the European Technical and Scientific Committee (ETSC), propose the evolution of thematic activities and actions of EWA.

European Technical and Scientific Committee (ETSC)

The ETSC provides a focal point for communication and co-operation between European practitioners and researchers concerned. Under the ETSC several working groups are organised. These working groups are installed according to the needs of the association. Currently there are working groups on: Climate Change, Groundwater, River Morphology, Sewage Sludge and Sustainable Flood Management. The work results in technical and scientific papers and documents.

The committee is also responsible for the organisation and sponsorship of workshops, seminars, conferences and symposia.

The Network of Experts

Although the working groups already present a focal point for the exchange of information, they only involve a limited number of persons out of the approximately 50,000 members assembled in the EWA National Member Associations. Additionally, the working groups cover mainly specific topics.

The EWA Water Manifesto Issue 3

By means of its Manifesto, the EWA wants to draw attention to current important water issues in Europe and to propose their resolution by the sustainable management and use of water resources. With the third issue of the EWA Water Manifesto, the European Water Association calls upon the society in general and all relevant stakeholders to strive for responsible use and exploitation of water. After being published for the first time in November 2010, the third issue of the EWA Water Manifesto has become an integrated part and a cornerstone of EWA efforts in Brussels. There is still a great need for research and innovation in the water sector, especially with the new challenges associated with the topic of micro pollutants among others. Therefore the EWA is in frequent contact with the "European Innovation Partnership on Water" which was founded by the DG Environment recently to provide them with suggestions concerning water-related topics.

The scope of the EWA Water Manifesto has grown since the publication of the first issue; however, the topics of the third issue are a continuation of the "hot topics" and are as follows:

- Implementation of the EU Water Legislation
- Climate Change and Water
- Demographic Changes and Water Safety
- Water Scarcity and Droughts in Europe
- Sustainable Water Supply and Sanitation Services
- Changing Cities and Integrated Urban Water Management
- Flood Resilience – a Major and Growing Challenge
- Water Efficiency and Agriculture
- Water and Biodiversity
- Water and Energy
- Emerging Pollutants
- Water Cost Recovery and Incentive Pricing

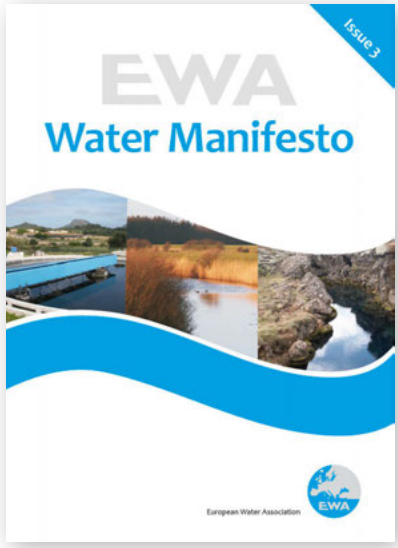
Our Vision – Clean Water for Europe, Clean Water Worldwide

EWA promotes the sustainable management of the total water cycle and hence the environment as a whole. EWA understands the need for the sharing of water by man and nature, by industry and homes, between countries, with social justice and equity and the need for good management and technology to ensure the sensible use of resources.

EWA is a source of knowledge, experience and expertise which can be shared for the greater good of the people of Europe. EWA is willing to act as a platform for knowledge and know-how exchange between its members and the European institutions. Since its creation, EWA seeks "Clean Water for Europe". It further wants to contribute to "Clean Water Worldwide". This emphasises our common responsibility in promoting water related actions – information exchange, expertize contributions, environmental education and good cooperation with the societies and other actors. Water is an entry to the societal development.

The work of the EWA Water Manifesto is mainly done on a voluntary basis, and the numerous water specialists in the National Associations are to be thanked.

You can download the EWA Water Manifesto. Simply go to our website: www.ewa-online.eu or contact us, we will be happy to help you!



EWA Statement regarding the European elections in 2014

With issue 3 of the Water Manifesto EWA had made an important contribution to the EU-Commission's "Blueprint to safeguard Europe's Waters". With regards to the 2014 European Elections, the EWA through the statement issued in November 2013, is calling for urgent action on significant topics for the water management that must be part of the Brussels water agenda in the years to come. Topics addressed in the statement were:

1. Water Stress and Agriculture

EWA calls for policies recognizing the interactions and variable dependencies between agriculture and water management, and stresses the importance to further develop water saving techniques in agriculture.

2. Water Scarcity and Droughts in Europe

EWA calls for a better planning (demand management, land use planning, drought observatory and indicator development), enhancing integration of water scarcity and droughts (Ws&D) in the River Basin Management Plans (RBMP) and in sectorial policies.

3. Water Cost Recovery and Incentive Pricing

EWA calls for increased sustainability and improved transparency of infrastructure investments by implementing cost efficiency calculations of different options, indicating full life cycle costs (investment, operation, maintenance and partial replacement).

4. Ageing Infrastructure and Preparing for the Future

EWA calls for sustainable operation and continuous maintenance of the infrastructure and underlines the need for well-educated staff.

5. Water and Energy

EWA calls on the European Commission to ensure that water management aspects are considered in the development of future energy supply policy.

6. Climate Change and Water

EWA calls on the European Institutions to ensure that policy in water-reliant sectors such as agriculture and energy fully recognizes the significance of climate change.

EWA Activities

Workshop: How to deal with Brussels

Based on the success of EWAs first EU policy workshop in 2010, three more workshops were held on October 31, 2012, June 24, 2013 and November 15, 2013, under the theme "How to Deal with Brussels". The workshops gave an overview of all the players in the European water sector, the EU institutions and the EU decision making process, how policies are initiated, adoption of legislation, and implementing Acts. The workshop also dealt with the core elements of legislation and funding instruments that are shaping the water environment, how to get involved, to get information and to contribute to the process.

Joint summer school with dex in July 2012

The EWA, in cooperation with dex (Deutscher Expertenrat für Umwelttechnologie und Infrastruktur e. V.), organized the 4th dex summer school, Advanced Course on Wastewater Treatment and Drinking Water, which was held on July 15–20, 2012 in Rottenbach, Austria. The target groups were post graduate and doctoral students (civil/ environmental engineering or similar), young water professionals from consulting companies and expert companies from all of Europe. The goals of the summer school were the transfer of scientific background, advanced knowledge and actual experience on methodologies and technologies for water quality management, as is required to implement European Water Legislations.

The 4th EWA/WEF/JSWA Specialty Conference

EWA, along with the Japan Sewage Works Association (JSWA) and the Water Environment Federation (WEF) co-organized a joint conference on "Cutting-edge Technologies and Best Practices on Sewerage". The conference was held at the Kobe International Conference Centre, in Kobe, Japan on 26–27 July 2012 and comprised of 3 key note speeches followed by 20 presentations in 5 sessions. EWA was strongly represented at the conference with the delivery of one key note speech and 6 presentations. During the Opening Ceremony, Dale Jacobson (WEF) and Johannes Lohaus were honored with the Distinguished Service Award by the Japan Sewage Works Association for their generous contribution of time, support and inspiration to the EWA/WEF/JSWA Specialty Conferences.

8th Annual Brussels Conference

The 8th Annual Brussels Conference on the topic "European Year of Water – Upcoming Challenges" was held on October 30, 2012 in Brussels, Belgium. The venue for the occasion was the Representation of the State of Baden-Württemberg to the EU. Held in cooperation with the DG Environment of the European Commission, the annual Conference attracts water professionals from all over Europe with the main objective being to establish a dialogue between the European Commission and European water professionals. The three main topics addressed in four sessions at the conference were water quality, water quantity and the water/energy nexus. These are stress areas which were acknowledged by the blueprint rapporteur MEP Dr. Richard Seeber. There were presentations on Climate Adaptation – water scenarios and sectorial aspects, Needs and Challenges for Water Reuse in Europe, Water as an Irreplaceable Part of Agricultural Production, Micropollutants, Compatibility of Hydropower with the Water Framework Directive, Energy Recovery Strategies in the Urban Water Cycle, Research and Innovation in the European Water Sector, and Challenges of Financing Water Infrastructure in Southeast Europe.

9th Annual Brussels Conference

The 9th Annual Brussels Conference on the topic "Water – Investing Today for the Future" was held on November 13–14, 2013 in Brussels, Belgium. Deteriorating infrastructure, particularly water supply mains and sewerage networks, leads to high levels of unaccounted for water, pollution, poor levels of treatment and increased energy costs to resolve the problems. At the same time investment is required in water resources, wastewater collection systems, treatment & disposal, flood control and flood risk management, all against the background of a changing climate. The first day of the conference dealt with the Policy and Management Aspects while the second gave an overview of the Technical, Economic and Scientific aspects of the topic. The speakers were from academic, institutional and commercial backgrounds with the opening keynote speech from the head of the Water Unit at DG Environment. This was the first time the conference was being held as a two-day event and also the first time at this venue; the University Foundation, Brussels. Held in cooperation with the DG Environment of the European Commission, the main objective of the annual EWA Brussels Conference is to establish a dialogue between the European Commission and European water professionals and stakeholders.

Werner Flögl elected as new EWA President

At the EWA Council meeting on 14th June, 2013, in Tuusula Finland, Dr Werner Flögl from Austria accepted the honorary duty from Prof. Pertti Seuna (FI) as the new EWA president. Károly Kovács from Hungary was appointed as EWA Vice President and both will serve for the period 2013–2015. Dr. Werner Flögl is the honorary president of the Austrian Association for Water and Waste Management (ÖWAV) and represents ÖWAV in the Council of the EWA. He is also Vice President of the International Commission on Large Dams (ICOLD). Since 2005 he has been a member of the EWA Management Committee and contributes to the activities of the Association. Dr. Flögl is the owner and CEO of the FHCE (Floegl Hydro Consulting Engineers) working in the field of water with increased involvement in river basin management and flood protection. Mr Károly Kovács has been a member of the EWA Management Committee since 2011 and is representing the Hungarian Water Association (Magyar Szennyvíztechnikai Szövetség (MaSzeSz)) in the EWA Council. Mr Kovács is Managing Director of Pureco and BDL ltd companies and President of the Hungarian Water Cluster, Secretary General of the Hungarian Public-asset Evaluation Cluster. He is President of the Hungarian Wastewater Association and vice president of the Academic and Development Committee of the ASEM Water Resources and Development Centre.

EWA's presence at the IFAT ENTSORGA

During IFAT ENTSORGA 2014 from May 5–9, 2014, EWA was presented at the International Association Stand among many international associations such as the International Water Association (IWA), the Japan Sewage Works Association (JSWA), the Austrian Water and Waste Management Association (ÖVAW), Scientific and Technical Association for Water and Environment (ASTEE), Bulgarian Water Association (BWA), and many others. During the IFAT ENTSORGA EWA used the opportunity of the occasion to invite its National members to the annual Council Meeting. The EWA European Technical and Scientific Committee held its meeting on the fairgrounds as well.

17th EWA International Symposium at the IFAT ENTSORGA

The theme for the symposium was "**WatE**$_{nergy}$**R**$_{esources}$ – Water, Energy and Resources: Innovative Options and Sustainable Solutions". Interestingly, "WatER" can be seen as the acronym of three fundamental environmental components: Water itself, Energy and Resources. The successful harmonization of these "water-permeated" components is actually a main technical-scientific challenge for the human society impacted by both global environmental pressures and economic difficulties. In this perspective, the challenge for the water and wastewater sector is to combine the traditional goal of achieving appropriate and improved quality standards with the exigencies of energy sustainability and resource conservation and recovery of the solutions/systems proposed, planned and implemented that should attain also an economic efficiency. The symposium presented speakers and posters with innovative options for sustainable solutions orientated towards the feasible correlation of the energy and material resources with four strategic areas of the water sector: water supply, wastewater treatment, biosolid management and new sanitation systems.

EWA president attended the Business Leaders Forum -Budapest Water Summit 2013

EWA President and Secretary General attended the Business Leaders Forum of the Budapest Water Summit held in October, 2013. The Summit was a policy forum to facilitate consensus building amongst stakeholders concerning water and sanitation policy goals, with the aim to formulate a concrete recommendation for the UN General Assembly for setting the post-2015 development agenda. It brought together participants representing governments, international organizations, civil society, academia and the private sector. There was a consensus in adopting the "Budapest Water Statement: A Sustainable World is a Water-Secure World." The Statement included annexed policy recommendations on: creating SMART(ER) targets to ensure universal access to safe, gender-responsive and sustainable WASH; integrated consideration of water within its management context and in all basic services sectors; fostering good water governance; using water to create growth and "green economies"; and creating new micro and macro, private and public, financing methods.

EWA launches new website and logo

On the 14th of June 2013, EWA launched the new look of its website with a new logo and many new feathers such as calendar of events and easily accessible information. It provides a modern, user-friendly experience and improved navigation allowing guests to find quickly and efficiently the needed information. The site includes a list and links of the EWA members where further information about how to get in contact with our network in Europe can be found. Via the new website users can access the EWA publications, read and subscribe for the free bi-monthly newsletter, download articles and whole publications.

EWA's presence at Wasser Berlin International 2013

EWA attended Wasser Berlin International 2013 as a co-exhibitor with the DWA on April 23–26, 2013. EWA National Associations had the opportunity to put flyers and brochures on display. During this event EWA used the opportunity to hold meetings of its European Technical and Scientific Committee, its European Policy Committee and its Management committee.

Upcoming Activities

The 5th Joint EWA/WEF/JSWA Specialty Conference

The preparations for the next Joint Conference between EWA, WEF, and JSWA have already started. The Conference is organised in a cycle between the three continents, North America, Europe and Asia. The next conference will take place in Washington DC, USA in 2015. The first two planning meetings were held during the 9th EWA Brussels Conference and IFAT 2014. The conference is slated for June 2015.

10th EWA Brussels conference

The upcoming 10th EWA Brussels Conference will be held on November 17-18, 2014 in cooperation with the European Commission and again as a two day event as in 2013. The theme will be "Water in the Cities" with day 1 focussing on "new challenges – new solutions".

Ongoing Activites

4th Issue of Water Manifesto

EWA is planning to publish the 4th issue of the Water Manifesto. With the Water Manifesto the EWA wants to draw attention to current important water issues in Europe and to propose their resolution by the sustainable management and use of water resources. As the publication contains topics in progress, the update will come soon.

EWA Newsletter

The newsletter started in 2012. It was set up by the EWA Secretariat and Dr. Helmut Blöch. With the high quality contents and interesting information from Brussels and the European Commission, the newsletter has already over 1000 subscribers and counting with about 20 new subscriptions every month. The newsletter and counting, is free of charge and it is open open to the public.

Finances

Revenues	2013 €	2012 €
1. Members ' subscriptions	84,015.00	78,932.00
2. Events/seminars	**37,974.40**	**54,123.50**
IFAT – Dunbar Medal Ceremony	15,000.00	36,000.00
Brussels Conference and EU Water Policy Workshops	19,779.00	15,123.50
Others	3,195.40	3,000.00
3. Work performed for IFAT in the following year	5,720.61	0.00
4. Interest earned	0.00	279.42
5. Other revenues	11,992.62	10,113.91
6. Subsidy European Commission	0.00	75,451.00
7. Withdrawal from reserves	**802.19**	**0.00**
Total revenues	**140,504.82**	**218,899.83**

Expenses	2013 €	2012 €
Personnel costs	70,557.10	114,157.83
Travel costs	**9,045.90**	**19,394.73**
Management Committee travel costs	2,767.88	6,472.67
Others	6,278.02	12,922.06
Accommodation costs and furnishing	**10,489.16**	**13,222.05**
Accommodation Hennef	4,674.71	5,689.61
Accommodation Brussels	1,854.93	1,663.75
Others	3,959.52	1,857.06
Purchased services	6,736.76	15,592.84
Events/seminars	**21,608.20**	**12,960.94**
IFAT – Dunbar Medal Ceremony	9,694.24	6,405.38
Brussels Conference	8,302.18	6,405.38
EU Policy Workshop	1,900.78	
Others	1,711.00	374.42
Other costs	22,067.70	28,570.86
Transfers to reserves	0.00	15,000.58
Total expenses	**140,504.82**	**218,899.83**
Surplus/Defecit	0.00	0.00

Members of the EWA Management Committee (MC) for the period July 2013 – June 2014

President
Dr. Werner Flögl

MC Member
Paul Horton

Vice President
Károly Kovács

Honorary Treasurer
Karl-Heinz Brandt

MC Member
Petrit Tare

Chairman „European Technical and Scientific Committee“ (ETSC)
Fabio Tatano

MC Member
Prof. José Saldanha Matos

Chair Woman of the “European Policy Committee” (EPC)
Wendy Francken

The William Dunbar Medal

This prestigious medal is awarded to an individual of a member country of the EWA, in recognition of his or her outstanding contribution in applied technical development in the field of sewage and waste treatment and disposal. This Award, donated by IFAT, the international trade fair for water, sewage, refuse, and recycling, which is organised by the Messe München International, has been adopted by the European Water Association. It was previously presented every two years on the occasion of the EWA Symposium held in conjunction with the IFAT event, but is now presented at the EWA Brussels Conference beginning in 2013.

The award consists of a gold medal, a certificate plus cash amounting to a total value of € 8,000. The medal bears the portrait of William Dunbar on one side and on the other the logos of the EWA and IFAT. It is given in remembrance of William Philips Dunbar, born in 1863 in Minnesota (USA), who was appointed as Director of the Government Hygenic Institute in Hamburg in September 1892 to assist in managing the disastrous cholera epidemic. Dunbar improved the detection procedure for cholera and other pathogens and his pioneering improvements in city sanitation made him an authority that is still internationally recognised in the sector.

William Dunbar Medal – Award Winners

Year	Award Winner	Country
1975	Dr. A. L. Downing	UK
1978	Dr. Ir. Aale Pasveer	NL
1981	Prof. Dr. sc. nat. E. A. Thomas	CH
1984	Herbert A. Hawkes	UK
1987	Prof. Dr.-Ing. Wilhelm von der Emde	AT
1990	em. o. Prof. Dr.-Ing. habil. Franz Pöpel	DE
1993	Geoffrey Ashworth Truesdale	UK
1996	Prof. Dr.-Ing. E.h. Klaus R. Imhoff	DE
1999	Prof. Mogens Henze	DK
2002	Prof. Dr.-Ing. Rolf Kayser	DE
2005	o. Prof. Dipl.-Ing. Dr. techn. Helmut Kroiss	AT
2008	Prof. MSc, PhD, DSc Jiří Wanner	CZ
2010	Prof. OBE, PHD, FCIWEM, CWEM, CEnv Peter Matthews	UK
2012	Philippe Duchène	FR
2013	Prof. Dr.-Ing. Karl-Heinz Rosenwinkel	DE

The recipient of the William Dunbar Medal 2013: Karl-Heinz Rosenwinkel

Karl-Heinz Rosenwinkel, born in 1950, has been Professor and Head of the Institute for Sanitary Environmental Engineering and Waste Management at the Technical University of Hanover since 1995. After obtaining his PhD in the field of economic reduction of sewage contents from breweries and the fruit juice industry, he was managing director of aqua consult Ingenieur GmbH in Hanover from 1984 to 1995. The emphasis of Professor Rosenwinkel's research has been in the advanced treatment of industrial and municipal wastewater. He has been both director and coordinator of several national and international research projects. Because of his extensive experience, in addition to his activities in research and development, he has frequently been called upon to act as expert and consultant for authorities, industries and the operators of wastewater treatment plants. He is chairman of several working groups in Germany involved in the evaluation of technical standards.

His interest in research covers the complete field of wastewater treatment with a decided focus on the treatment of municipal and industrial wastewater including modelling. Particular mention is to be made of his research work in the area of membrane processes, direct removal of nitrogen, production-integrated environmental protection and on the generation of bioenergy from industrial residues. This choice alone substantiates the sheer broadness of the orientation of Professor Rosenwinkel's research subjects. They include basic research supported by the German Research Foundation (DFG) funds and also application-related subjects as particularly supported by the German Environment Foundation (DBU) or by the German Ministry for Education and Research (BMBF). Attention is also drawn specifically to cooperative research in EU projects in the broad fields of river-basin-management.

Within the specialist world Professor Rosenwinkel is well-known and valued for his comprehensive knowledge and his interdisciplinary competence, which extend beyond national borders. Through him, the technology, sustainability and economic efficiency in wastewater treatment have been improved decisively in many areas of sanitary environmental engineering with the development and implementation of new, innovative processes. Essential emphasis of his work is the research of innovative and environmentally compatible processes for the treatment of highly loaded (industrial) wastewater and anaerobic technology. With this, Professor Rosenwinkel always seeks collaboration with other specialist disciplines of the natural and engineering sciences in order to do justice to the complex questions with regard to energy efficiency, climate relevance and environmental compatibility. His authoritative, open and subject-oriented style, supports the interdisciplinary collaboration to a very high degree.

Professor Rosenwinkel to his credit has been the author or co-author of 6 books, 55 publications in scientific journals, 105 conference presentations, 20 speeches and 6 posters.

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EWA in Dialogue with Janez Potočnik, Commissioner for Environment, European Commission

Q1: Mr. Potočnik, the European Water Association (EWA) is a non-governmental and non-profit organization promoting the sustainable water management of the total water cycle and hence the environment as a whole. Our motto is "Clean Water for Europe, clean water worldwide". One year after the adoption of the Blueprint to safeguard Europe`s Waters what did change in Europe in the water sector?

The main change is the fact that we now have a common agenda shared by the European Commission, the Member States and stakeholders to improve the implementation of water policy, to better integrate its policy objectives into other policy areas, and to fill in a few remaining gaps. The Blueprint has been endorsed by the EU Council of Ministers and contains concrete proposals on the implementation of the Water Framework Directive through the development of guidance on ecological flows, tools for the improved assessment of costs and benefits of water policy measures, the promotion of natural water retention measures as effective multi-benefit tools which can contribute to water protection, biodiversity and flood protection, as well as the development of standards for water reuse which can help tap significant new resources and improve the knowledge base on water at national and EU level. These proposals have been integrated into the Work Program of the Common Implementation Strategy of the Water Framework Directive, which involves Member States as well as stakeholders. We are now working very hard to live up to this ambitious agenda.

Q2: The European Commission has started the European Innovation Partnership on Water. Which expectations do you have from this initiative?

The European Innovation Partnership (EIP) on Water is expected to generate concrete tools to address water challenges. In particular the EIP Water Action Groups work to develop innovative solutions in areas where there is a clear (market) demand. For example, low energy technologies for water re-use and desalination; methodologies for the calculation of water pricing; ecosystem services valuation and management systems, etc.

We hope that as a result practical solutions will become available to water managers and we plan to help disseminating them to all those concerned.

Q3: The World Water Day 2014 will have the motto "Water and Energy". Which challenges do you recognize for the water management in relation to renewable energy?

This is a complex relationship. Hydropower development is part of the renewable energy mix and also allows the storage of renewable energy produced via other energy sources. However, hydropower may also generate changes in rivers with negative effects on their status. Managing these trade-offs will be the main challenge. The Common Implementation Strategy of the Water Framework Directive provides guidance documents on this

matter which Member States should follow to maximise the win-win aspects of the relationship between water and energy.

But hydropower is not the only source of energy that has a strong link with water. Other renewables which are projected to grow, such as biofuels and biomass, require water to be produced and can pollute water because of the use of fertilisers and pesticides.

Q4: Closely related to the question of energy sector is the question of climate change. What should happen in the upcoming years in this aspect?

We know today that climate change will cause an intensification of extreme weather phenomena, particularly floods and droughts, all over the world including in Europe. This is why in the Blueprint we have insisted on the need to get ready for and adapt to these changes. If our aquatic ecosystems are in good status, as required under the Water Framework Directive, they will be much more resilient to withstand such extreme events. In this respect, I cannot stress enough the role of Green Infrastructures such as floodplains and wetlands as excellent examples of ways of working with nature to be better prepared to face climate change consequences.

Q5: How do you see the future of EU water policy concerning energy? How energy will be reflected in the development of future water policies will energy be reflected?

The challenges on sustainable use of water resources I have mentioned before will need to be tackled and Member States have an important arsenal of measures in their River Basin Management Plans that they need to tailor and expand to address these challenges. For example measures such as ecological flows, fish passes, fish friendly turbines etc. should become customary in developing hydropower to ensure that the benefits of renewable energy come at the lowest possible environmental impact.

But there are also energy/water win-win opportunities that we should be able to harvest. Water needs a lot of energy to be cleaned in order to become drinkable, to be heated, to be transported and to be treated after use. There exists a considerable potential for water and energy savings that can be more fully exploited for the benefit of the environment and, equally important, for people`s purse. For example by developing Ecodesign criteria for water using devices such as taps and showers, we will not only save water and energy but also costs for individual households while at the same time create job opportunities.

Other examples for a sustainable use of energy and water resources would be the development and application of low energy, water reuse technologies in wastewater treatment thereby reducing freshwater demand for industrial cooling and crop irrigation.

Q6: Which is a very good example to show Europe improving the water-energy nexus?

The European Innovation Partnership offers concrete examples. One of its Action Groups focuses on the use of desalination powered by renewable energy, to reduce the impact on the environment in meeting the energy demand of desalination; another one on the development of a framework for energy companies to assess their water use and water impacts. But also the guidance on hydropower development I mentioned before is a powerful tool for water managers in order to balance economic development and environmental protection.

Q7: Do you have a final message you want to share with the readers of this Interview.

Let`s continue and even multiply our joint efforts for water protection in the years to come. We need to liaise with the research and innovation communities to steer the development of those solutions that can address old and new water challenges. But above all, we need to manage our water in an integrated manner, avoiding one-dimensional solutions and involving stakeholders on the ground. Your readers manage water every day. They will be key actors to spread and implement this message. I count on them.

Interview with Dr. Richard Seeber, Member of the European Parliament

Mr Seeber, after 10 year of duty you decided not to continue with your position as a Member of the European Parliament as of May 2014. One of your priorities during this period was the water management. Furthermore, you are the Founder and the President of the EP Water Group.

Q1: How do you evaluate the results of your work in the water sector? What were you able to achieve?

Looking back at the past ten years in the European Parliament, I am first of all proud to have been a member of this institution, especially an EPP Coordinator in the ENVI Committee, thus contributing to facilitate life for the European citizens.

Water policy has indeed been my priority. My commitment began with the Bathing Water Directive, where I was a Shadow rapporteur. Subsequently, I was rapporteur to the Commission`s Communication on Floods and Droughts in 2006. At that point I realised that water was of crucial importance to our citizens and that its management would soon present challenges. I therefore decided to start the Parliamentary Intergroup on Water, today`s "EP Water Group", which is, as I am proud to say, one of the most successful intergroups in the Parliament to this day. In over 20 very fruitful meetings, we have discussed issues of great significance to water policy – energy, agriculture, concessions, financing, innovation, water reuse etc.

I was further responsible for the Implementation Report on Water ahead of the Commission`s Blueprint, which marked an important milestone in the Water Framework Directive. In this report, I took a close look at the implementation of all existing water legislation, and called upon the Commission to work on three objectives: firstly, improving the implementation of current legislation, secondly taking regional criteria better into account and thirdly, mainstreaming water policy into all other relevant EU policies (such as regional or agricultural policy). I was very pleased to see that the Commission later had taken note of my findings when presenting the Blueprint.

Finally, I was rapporteur on the so-called "Priority Substances" dossier, i.e. the Environment Quality Standards Directive. Today, our waters contain an alarming number of harmful chemical substances which need to be monitored and, eventually, phased out. Together with the Commission and the Council, we elaborated a satisfactory compromise to establish a watch list, where Member States could places suspicious substances. Further, we set cross-links to other EU policies, in order to achieve coherent action when fighting harmful substances. Pharmaceutical products of concern for water will in the future be analysed through a General Pharmaceutical Strategy as suggested by my report.

In all, I would like to say that my time in the European Parliament was extremely rewarding. I hope I was able to serve the European citizens with my activities for the environment.

Q2: The UN has put stress on Water and Energy for the year 2014. Water and energy are closely interlinked and interdependent. About 8% of the global energy generation is used for pumping, treating, and transporting of water to various consumers. What do you think should be considered on European level in relation to water and energy?

This year, as well as the World Water Day 2014, will be all about water and energy. I highly appreciate this choice of topic, since I consider this nexus one of the greatest challenges in the future of water policy. Water and energy are enormously interlinked – most energy-related services cannot be realised without water, just think of the energy production, transport, storage, cooling or further treatment.

The European Union has acknowledged this nexus, and proactively enhances research and development in order to tackle this challenge. A few years ago, the European Innovation Partnership for Water has been founded to promote innovative technology and research and stimulate progress in this field. Another major initiative of the EU is the field of energy and resource efficiency. Already years ago, the EU 2020 targets propagated the economic and efficient management of energy. The aspect of water in all this will increasingly gain importance.

The main challenge, as I see it, is however the political work. We politicians have the responsibility to convey the message not just to our citizens, but also to all decision-makers and industries, that energy and water are limited resources which need to be managed sustainably. We have to make it clear that Europe`s boundaries are non-existent when it comes to these shared challenges – we need to join forces to meet our energy and water needs.

Q3: Which potential conflicts between the water and energy can be seen in the future?

One of the most controversial political issues in the field of water and energy today is the issue of shale gas. This unconventional energy source has brought energy independency upon the United States, and is therefore hotly debated also in Europe. Again, these questions need to be answered jointly, by all European Member States: Do we want another source of fossil fuel in Europe? Will the environmental damages be worth the potential benefits? We must not forget that Member States have different needs in this regard. If Poland decides to replace its coal plants by shale gas as transition technology, this might be an acceptable scenario. For Member States like Austria, which already produce over 60% of the electrical energy from renewables, it would be certainly be counter-productive. I am therefore fighting to introduce compulsory environment impact assessment procedures, in order to keep environmental damages through energy production at a minimum.

In a wider context, future conflicts will certainly focus on the energy-intensive water treatment technologies, such as desalination or wastewater treatment. I am convinced, in any case, that the inter-linkage of water and energy will grow in the future. Therefore, we need an inter-sectorial approach to deal with this situation.

Q4: With regard to the upcoming European elections in 2014, the EWA is calling for urgent action on significant topics for the water management that must be part of the Brussels wa-

ter agenda in the years to come. Is climate change fully recognized by the policy in water-reliant sectors such as agriculture and energy or should its significance be further increased?

I note that throughout the past years, water has gained a high position on the European agenda. Integrating water in other policies, establishing cross-links in crucial legislations has become everyday business in Europe. One of the most outstanding achievements is clearly the embedding of certain cross-compliance criteria in the Common Agricultural Policy (CAP) reform. My implementation report and the Commission`s Blueprint certainly had its share in this development. However, we must not rest on our laurels – much remains to be done still. It is crucial to think and act in a holistic way, i.e. to consider water in as many legislative acts as possible. Water ought to be seen as a grid, much like an energy grid. There are natural and artificial parts to this grid – and their fluctuations should ideally be balanced to complement each other.

Q5: In May 2014 there will be the next European Elections. Which topics in relation to water policy do you see as important for the next 5 years?

We need to continue our endeavours to put water even higher on the political agenda. Climate change, population growth and urbanisation will exacerbate water stress in the coming decades – we will need to have solutions ready when the situations require it. We must therefore not tire to work on the research and development of innovative and efficient technologies. The European Commission is in the process of elaborating two new legislative projects as announced in the Blueprint. While I appreciate the forthcoming proposal on water re-use, I am fiercely against the planned eco-design acts on water-efficient taps and showerheads – agriculture and energy production should be primarily targeted here, not the households!

Q6: You decided not to candidate for a further period in the European Parliament. Will you not to be a candidate nevertheless remain faithful to water sector?

Water is of personal and political interest to me. I am currently trying to find a successor to chair the EP Water Group. This platform has been widely recognized and is valued by many stakeholders – the European Commission, my parliamentary colleagues, the water sector and water-related NGOs. It would be sad to discontinue this fruitful dialogue. If ever possible, I will support it in the future.

Q7: Do you have a final message you want to share with the readers of this Interview?

First of all, I would like to thank the European Water Association for giving me the opportunity to outline my thoughts on this precious topic.

Finally, water is life – and it is our life. Think about it before you waste it.

Energy Management – A new challenge for a river basin management company

In Germany about 10,200 sewage plants consume more than 4,400 GWh per year or 0.7 % of the total national power consumption. The main portion with about 86 % of the consumption is caused by about 2,000 sewage plants with a size larger than 10,000 population equivalents (pe).

Energy management is a new challenge for a river basin management company. Besides the given duties as a river basin manager, new structures and goals have to be introduced. The paper focuses on the energy related activities in the catchment area.

Wupperverband, as a river basin management company in the catchment area of the Wupper River, operates 12 dams, 11 wastewater treatment plants, a sludge incineration plant and additional facilities, e.g. storm water retention tanks and rain basins. Wupperverband is engaged to ensure sustainable environmental protection within the catchment area of the Wupper River. In fulfilling its tasks in the field of water management – in particular the purification of sewage water, operation of reservoirs, maintenance of ecological waterways and drinking water supply – the main focus is to provide optimal utilisation for humans and the environment.

Fulfilling these tasks needs an amount of electric and thermal power. The overall electric power consumption of the river association amounts to 40 GWh with an average consumption of 33 kWh/pe on the wastewater treatment plants. In addition to the electric power consumption Wupperverband needs around 45 GWh heat which is mainly generated by cogeneration (Combined Heat and Power (CHP)) and additionally by fossil oil and gas.

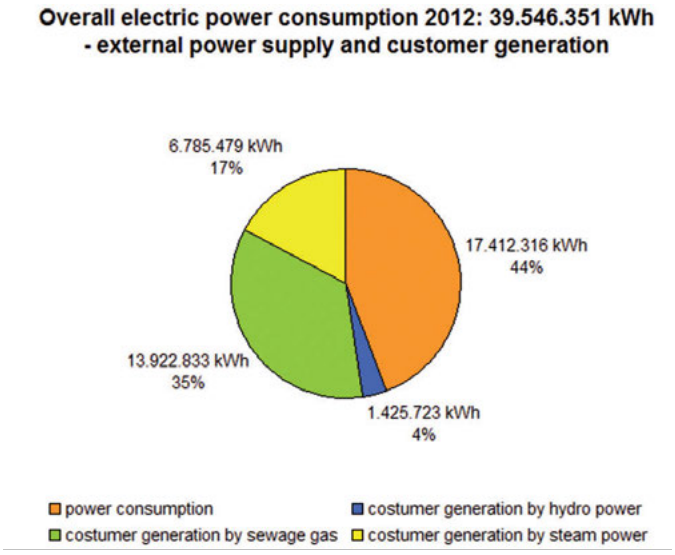


Figure 1. External power supply and customer generation 2012

Due to the structure of the Wupper River catchment Wupperverband is the main producer of renewable energy cathment, Wupperverband is in the region (28 GWh in 2012).

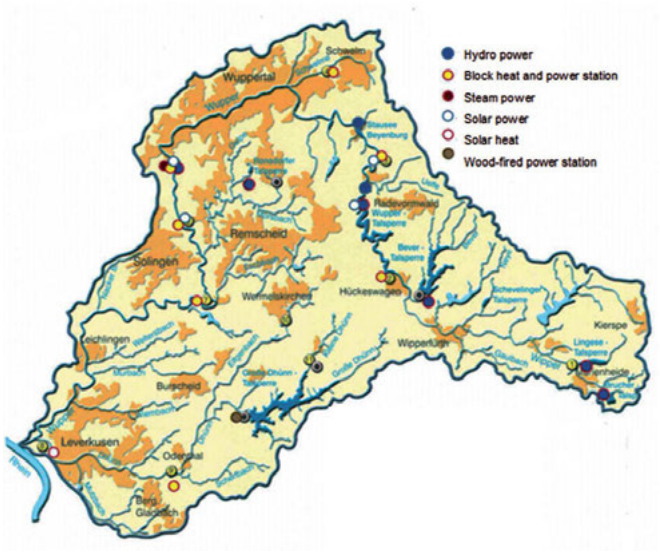


Figure 2. Renewable energy by the river basin management company Wupperverband

The medium-term objective is to produce more electric power than needed for its task fulfilments by 2020. Cost wise there is a need to scope with energy related questions. The energy costs of the Wupperverband are the main costs of operation.

The focus by this paper is the concept of energy management of Wupperverband as a river basin management company and the development of this concept for the challenges in future. In the end it comes to a three pillar strategy of energy management.

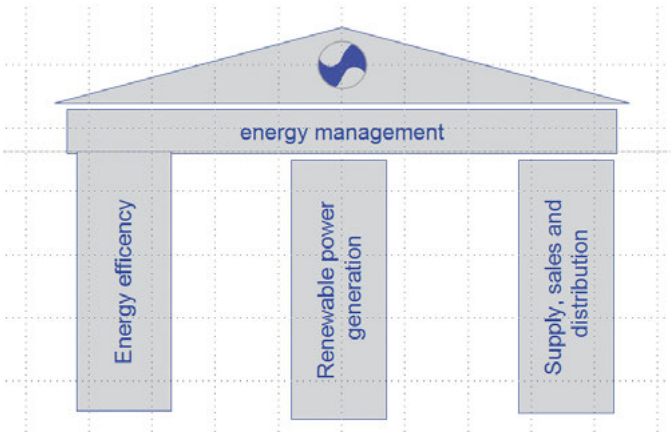


Figure 3. Three pillar strategy of energy management

The essential task of energy management is to increase the efficiency of the plants in the context of the continuous improvement process. Mainly efficient oxygen enrichment, sewage dewatering and the energy consumption of pump operation. With changing energy markets the question of load management becomes a new important topic in water management.

After putting the efficiency measures into action, the next step is to cover the required energy by customer generation. The essential possibilities consist in increasing the amount of sewage

gas and a more efficient utilisation of this gas. Mainly co-digestion seems to be a successful way of increasing the amount of gas on a wastewater treatment plant.

In addition to the conventional possibilities of using water power and CHP plants, the structure of Wupperverband offers prospects of using steam power, wood and solar energy. During times of high electrical energy consumption, there is a gap between consumption and generation because of missing storage infrastructure which has to be buffered by the national grid.

Besides the classic purchase of energy, the market-orientated sales of the surplus electrical power is one of the main task for the association in future. A fairly complicated German Energy Law needs a continuous analysis of this topic to find out what could be relevant for a water management company.

All this will be ecological, but it is also important for economic reasons to follow the innovative and decentralized energy concept for the future. Treating wastewater treatment plants as an energy island would not be an effective way, but in the context of a local energy infrastructure, it will become an important part.

Hydraulic Fracturing for Shale Gas in the UK – Sustainability Implications for Water Supply and Re-use; and Protection of Groundwater Resources

Shale Gas and Fracking

Shale gas is mostly composed of methane or 'natural gas'. The gas produced from shale is often referred to as 'unconventional gas', which describes the process required to extract it. It is as it is produced directly from the source rock rather than 'conventional gas' which is found in reservoirs usually in sandstone or limestone. To enable the gas to flow from the shale it has to be systematically fractured or 'fracked' using pressurised fluids to open small fissures in the source in rocks.

What makes hydraulic fracturing different from other hydrocarbon extraction is the use of water and other materials to open fissures in the rock to encourage the oil or gas to flow. Fracking for shale gas requires higher pressures and significantly higher volumes of fluid than conventional well stimulation techniques as there are very few natural fissures in the rock. The number of wells also needs to be more intensive to access the resource.

Sourcing gas that utilises fracking generally poses greater environmental challenges than conventional developments and robust regulatory regimes will be required to mitigate risks. Key issues include water resources, potential contamination of the ground and aquifers with fracturing fluids or naturally occurring substances from lower strata, the release of fugitive methane, local air quality impacts, landscape and visual amenity impacts, consequences of induced seismicity, and flood and future climate risks.

This article reviews the sustainability implications for water resources, water treatment and the water environment, including groundwater, from any future shale gas exploitation in the UK. Flood risks and climate adaptation are also considered.

The Extraction Process

The extraction of shale gas from rocks with low permeability at economically viable flow rates relies on the use of two technologies; horizontal drilling and hydraulic fracturing. As shale gas deposits are typically deeper than conventional reservoirs, they require deeper wells and the use of horizontal wells to maximise the amount of shale area that can be fractured. Horizontal drilling allows this to take place. To enable the gas to flow from the shale to the well it has to be systematically fractured or 'fracked' using pressurised fluids. Water, chemicals and other materials are pumped at high pressure to fracture and then hold open fissures in the rock to encourage the oil or gas to flow to the well.

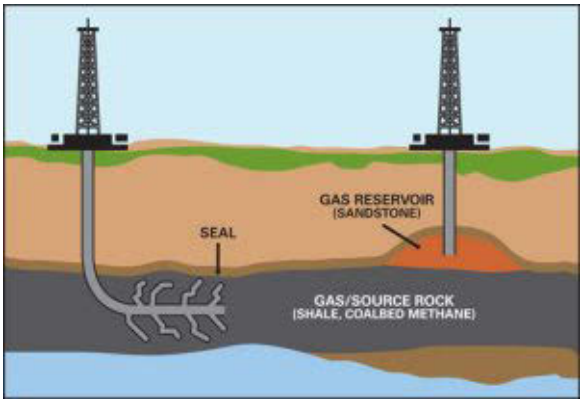


Figure 1: Schematic of natural gas resources and shale gas extraction

A typical production pad, about the size of a football pitch, may contain up to 16 wells, with each well running a series of lateral wells into the shale for up to 2 km.

Horizontal wells are fractured in stages (Figure 2) and a mechanical plug put in place to stop the gas from flowing back up the well whilst the next section is perforated and fractured. This process continues until the whole lateral has been fractured, the plugs are then drilled through to allow the fracturing fluid and gas to flow up the well.

What makes hydraulic fracturing in shale gas extraction different from other hydrocarbon extraction techniques is that it is on a greater scale; the wells are often drilled deeper than conventional wells and a greater number of wells are needed to access the resource. Shale also requires higher volumes of water and chemicals and higher water pressures due to the depth of the well and because there are very few natural fissures in the rock.

Risks to the Water Environment and Management of these Risks

The impacts of shale gas extraction on water are likely to be local, dependent on whether the geographical location of any productive areas of geology coincide with areas of particular

Ronnie Falconer

Ronnie Falconer is a senior consultant with Jacobs with 40 years' experience in flood resilience and climate adaptation. Ronnie recently acted as principal flood risk expert in assessing, for a major global client, the vulnerability of large production facilities to all types of flood and climate risks at 17 locations in 7 countries throughout the Far East and in the US. He has a lead technical role on the Shannon Catchment-based Flood Risk Assessment and Management Study which includes river and coastal flood risk mapping and modelling of over 1,600 km of river, estuarine and coastal systems, and all aspects of flood risk management plan preparation for around 60 communities. He also acted as Project Principal for the recent Dublin FloodResilienCity Project which included development of a pluvial forecasting and warning system, modelling of pluvial flooding, assessment and mapping of pluvial flood risk, the development of guidance on mitigation measures and assessment of surface water management and storage options. Ronnie Falconer is a Past-President of the Chartered Institution of Water and Environmental Management in the UK.

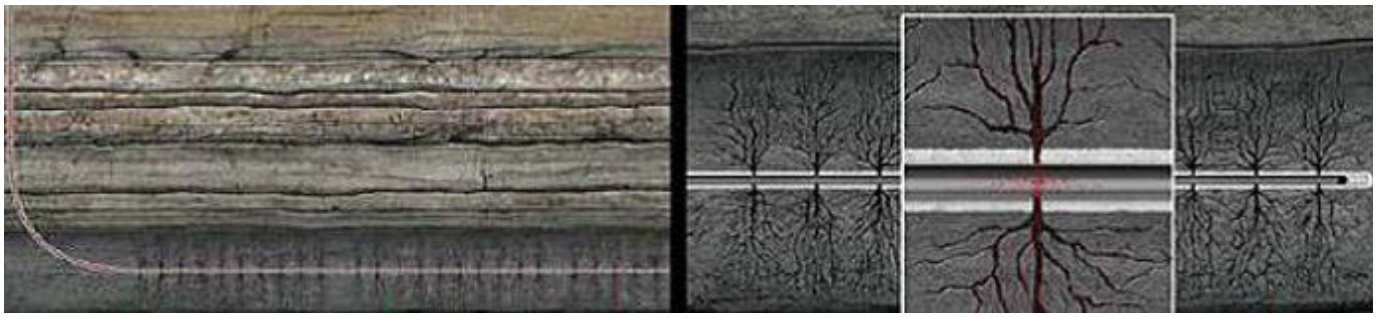


Figure 2: Stages of a hydraulically fractured lateral well

water resource pressure and, or near to groundwater resources or sensitive aquatic environments.

Potential risks to the water environment are likely to arise from:

- How much water will be needed for the processes of drilling and fracturing?
- Where the water will be sourced and how it will be transported?
- Whether there will be enough water locally available in the future as an industry develops.
- The potential for contamination of groundwaters or the local environment from chemical additives in the fracture fluid, poor well design or failure of well integrity, mobilisation of solutes or methane.
- Flooding of sites and any impact on flooding elsewhere caused by the development.
- The risks from the storage and transportation of the returned fluids.
- Whether there is the treatment capacity to clean up the flowback and produced water.

Possible management strategies include:

- The potential for reuse of water in the hydraulic fracturing process, accepting that legal frameworks may pose restrictions.
- Protecting groundwaters during and after decommissioning.
- Application of good practice in sustainable flood risk management.
- New technology and innovation, particularly with regard to low water or no-water techniques.
- Development of industry best practice.

Water Resources

Water is a renewable but finite resource. It has an economic value in all its competing uses, except crucially that for the environment. The failure to value water for environmental needs has been the root cause behind a large number of examples of environmental degradation.

Water abstraction is the process of removing water from natural sources such as rivers, lakes and aquifers and in the UK is regulated through a system of licences. Over-abstraction can result in a decrease in the availability of public water supply, adverse effects on aquatic habitats and ecosystems from water quality degradation, changes to water temperature and erosion. There is also the potential for the underlying geology to become destabilised due to upwelling of lower quality water or other substances and as a result of a reduction in pore water pressure.

Demands on water vary across the UK and the amount of water available for use also varies geographically and temporally. The environmental regulator is responsible for deciding the maximum amount of water that may be taken from the environment for domestic and business use, without compromising environmental needs.

How much water is needed?: Overall, when compared to the life time of a shale gas well the period for water demand is quite short and focussed at the early stages with a large upfront water usage over a few days or weeks, after which the natural gas is produced over many months or years. Estimates of water use have ranged from 250 – 4000 m^3 for drilling and 7000 – 23,000 m^3 for hydraulic fracturing per well. This large variation in estimates of water use reflects the complexity of drilling, geological conditions, borehole depth, pressure, thickness of the gas reservoir and other factors.

Where will the water come from?: Shale gas operators have the option to source water from the local area by abstracting it directly from a river or groundwater source under licence. They

Steve Thompsett

Steve Thompsett is Director of Water and Energy Environment at CAPITA. He has 20 years experience in environmental risk management across both the private and public sector. Steve was recently seconded into the Department of Energy and Climate Change, where he coordinated the UK Governments early policy work on unconventional oil and gas in the UK. He has been lucky enough to be involved in policy formulation and development across a range of sectors covering energy, flood risk, integrated coastal zone management and climate adaptation.

Steve is a member of the Chartered Institute of Water and Environmental Management sitting on both their Energy Network and Rivers and Coastal Committee, he is also a panel member of the joint Defra/EA Research and Development Programme for flood and coastal risk management in England and Wales.

may also source water directly from the public water supply. Usage of mains supplies requires the agreement of the relevant water company.

There may be scope for larger operations to recycle their water for future fracks following the treatment of flowback water. The returned water can be between 20-80% by volume of that put into the ground. This would require treatment on site.

Future water resource availability and sustainability: Water availability and the permitted quantity that will be able to be taken from the environment is likely to decline in the UK in the future from the demands of a growing population, the impacts of climate change, 'sustainability reductions' and other factors. One of the biggest pressures on water resources is projected population growth.

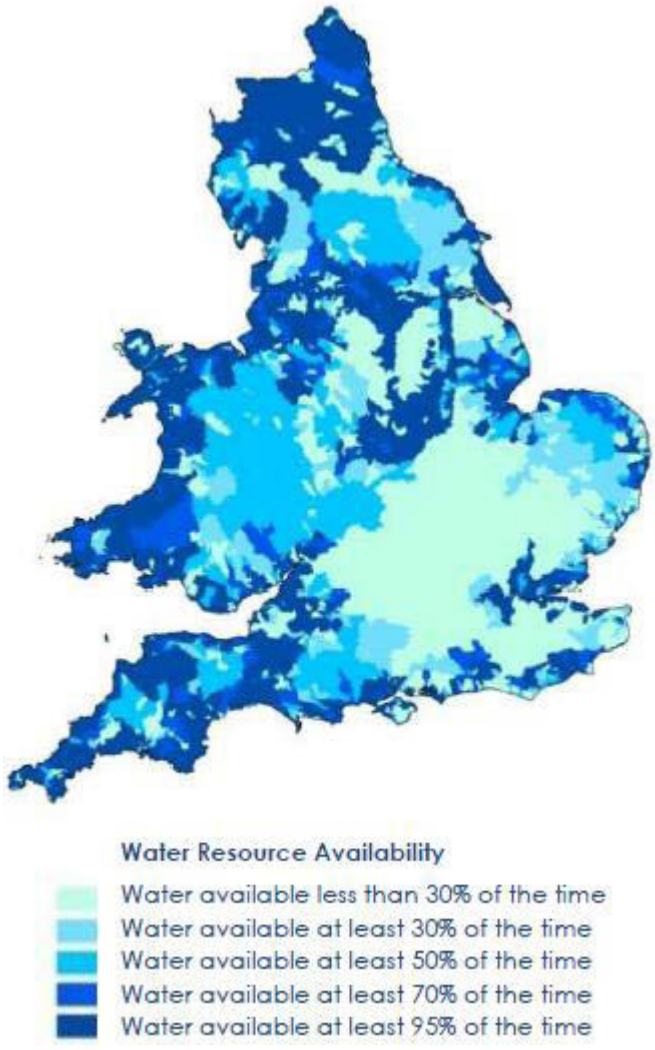


Figure 3: Water Resource availability in the UK
(Ref. Environment Agency. 2013. Managing Water Abstraction)

Future Climate, Flood Risk and Adaptation

Climate change is likely to alter the water cycle significantly in the future. The amount and distribution of rainfall will vary, a reduction of 40 per cent in summer rainfall by the end of the century may occur in the south of England and there are likely to be changes to the frequency of drought conditions[1]. There are large uncertainties around the extent of the changes. Most scenarios indicate decreases in flows, especially in the south and east UK (up to -80 per cent) whilst in the west and north changes may be small. The UK Environment Agency's report on current and future water availability[2] uses scenarios to combine the impacts from the pressures on water resources in the future and predicts an overall decrease in the amount of water available.

Sustainable flood risk management: Under the UK planning system a flood risk assessment (FRA) will have to be undertaken for each proposed drilling site. This will involve assessment of the flood risk to the site from any flood source including coastal; fluvial from rivers and watercourses; pluvial (surface water); groundwater; sewers and watermains; and dambreach risk from reservoirs or canals. Where a flood risk is identified sustainable mitigation measures will have to be evaluated including evacuation plans for staff on site should a significant flood event occur. The FRA will also have to assess the impact of the site (and any associated access routes) both during the construction and the operational phases on flood risk elsewhere. Should any significant impact be identified, appropriate mitigation measures must be proposed. As part of the FRA climate change must also be taken into account.

Climate Adaptation: Not only is sea level, rainfall and river flow projected to increase for many of the areas where fracking sites are likely to be located in the UK, which will have an impact on flood risk, but other future climate impacts must also be considered as part of good business continuity planning. Apart from flooding, other climate risks which should be considered include:

- Increased summer temperatures and effects on drilling equipment and other on-site assets.
- Potentially more frequent and intense storms and associated extreme wind conditions damaging plant and equipment as well as danger to operations personnel.
- The possibility of wildfire during heat-waves.
- Increase in sensitivity and vulnerability of the local environment and ecosystems.
- Impact on operatives in terms of heat stress and disruption to travel to site from storms and flooding.

Such risks should be addressed by assessing business vulnerability and appropriate mitigation as part of a Climate Adaptation Plan.

Potential for contamination of groundwater and the local environment

A frequently expressed concern associated with shale gas operations is that contamination of groundwater could occur. This may result from a catastrophic failure or loss of integrity of the wellbore, or if methane or contaminants can travel from the fracture through subsurface pathways[3]. There is also the potential for pollution of the local land and water environment if the retur-

1 Met Office. 2010. An extreme value analysis of UK drought and projections of change in the future. Journal of Hydrology.
2 Environment Agency. 2011. The case for change – current and future water availability
3 Stuart, M.E. 2012. Potential groundwater impact from exploitation of shale gas in the UK. British Geological Survey

ned water from the hydraulic fracturing process is not appropriately contained, managed, and treated prior to eventual disposal. Any material spilt on or applied to the ground has the potential to reach the water table. Whether it will or not depends on the material involved and the ground conditions at that site.

The term 'flowback' describes the water which flows back up the well during the hydraulic fracturing process. Typically between 20-40% returns to the surface in the first few days to a week, and is stored in holding and treatment tanks. Of the water that remains underground, much of it returns to the surface, up the bore with the gas, over the lifetime of the well at a slower flowrate. This is called 'produced water'. Flowback and produced water can be up to 80% of the volume pumped into the ground.

Flowback and produced water returns to the surface with a range of organic and inorganic substances in solution or suspension, including heavy hydrocarbons, naturally occurring radioactive materials (NORMs), a range of minerals and salts, as well as a small proportion of the substances which were added prior to fracturing. There is potential for pollution of the local land and water environment if this water is not appropriately contained, managed, and treated prior to eventual disposal. The nature of the substances concerned mean that the water may not be of an appropriate chemical composition to be sent to a typical municipal wastewater treatment works and may require specialist industrial treatment or pre-treatment in order to enable this.

Another potential source of contamination may be that to soil, surface or groundwater from spills of chemicals or return fluids. It has been common practice in the USA to store flowback and produced water temporarily on site in specifically constructed containment ponds. These ponds are one of the most visible and readily identifiable components of a shale gas pad, which also contribute considerably to their footprint in terms of land take. However due to concerns over the potential for pond liners to leak, under the UK guidelines best practice for fluid storage is recommended to ensure no risk of fluid leaks or spillages, this includes the use of appropriate above ground tanks that are fit for purpose and meet industry standards[4].

Protection of groundwater and the local environment

There are three possible avenues open to UK operators for treatment, reuse or disposal of flowback and produced water:

1. On-site treatment in order to allow re-use of a proportion of the water;
2. Removal from site to an appropriately licensed treatment and disposal facility; or
3. Discharge to a foul sewer with treatment at a municipal wastewater treatment works.

Reuse of flowback and produced water arguably represents the most sustainable process and is likely to be permissible following treatment and dilution of the wastewater prior to reinjection. This would have to take place on site to comply with the European Mining Waste Directive.

Groundwater supplies about one third of mains drinking water in England and up to 10 per cent in Wales. It also supports numerous private supplies. Any material spilt on or applied to the ground has the potential to reach the water table. Whether it will or not depends on the material involved and the ground conditions at that site. A frequently expressed concern from shale gas operations is that contamination of groundwater could occur. This may result from a catastrophic failure or loss of integrity of the wellbore, or if methane or contaminants can travel from the fracture through subsurface pathways[5]. One way to protect groundwater is to ensure that shale gas operations do not take place in the nearby area.

The UK Environment Agency expects that where a shale gas development does proceed, there will be established good practice in groundwater protection applied where any associated drilling or operation of the boreholes or shafts passes through a groundwater resource.

The most likely pathway of contamination to groundwater is from failure of the cement or casing surrounding the wellbore. The process of fracking and induced seismicity could itself damage the well casing and affect well integrity. Seismic monitoring is critical to understanding of how injection of fracking fluids might spark unexpectedly high magnitude seismic activity[6]. Current UK guidelines suggest a risk based approach to ensure that adequate controls are in place to eliminate such an event or to minimise any potential impact.

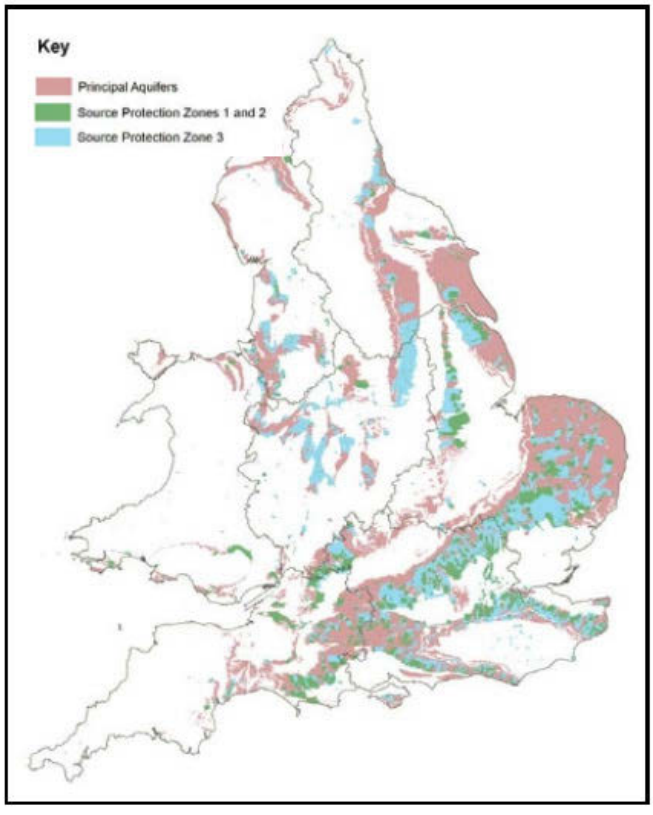


Figure 4: Principal aquifers and source protection zones in England and Wales (Ref. Environment Agency. 2013. Groundwater protection: Principles and Practice (GP3)

4 Environment Agency. 2013. Consultation on technical guidance for onshore oil and gas exploratory operations

5 Stuart, M.E. 2012. Potential groundwater impact from exploitation of shale gas in the UK. British Geological Survey

6 Stuart, M.E. 2012. Potential groundwater impact from exploitation of shale gas in the UK. British Geological Survey

Concluding Observations

The impacts of shale gas extraction on water are likely to be local, dependent on whether the geographical location of any productive areas of geology coincide with areas of particular water resource pressure and, or near to groundwater resources or sensitive aquatic environments.

Water Demand and Availability: There is a large variation in estimates of water needed in the fracking process and this variation reflects the complexity of drilling, geological conditions, borehole depth, pressure, thickness of the gas reservoir and other factors. The key issue is how many wells there will be in a given area and over what timeframe will they be fracked? At this stage it is difficult to assess likely overall requirements in the UK. Water demand appears unlikely to be significant compared to other uses but could have local impacts. Although there are likely to be greater pressures on water resources into the 2030s and 2050s, there are plans, systems and regulations in place in the UK to protect water resource availability and its competing uses.

Flood Risk and Climate Adaptation: Each site will require a flood risk assessment to be undertaken which will aim to ensure that any flood risk to the fracking site and any flood risk impact arising from the site are assessed and sustainably managed. This includes associated access routes. Future climate must be considered over the projected lifetime of the site. A range of potential future climate impacts must be considered as part of good business continuity planning for any fracking site or cluster of sites. Potential impacts could arise from increased flood risk, more frequent and intense storms and strong winds, temperature effects on plant, increased sensitivity and vulnerability of the local ecosystems, heat stress and other effects on operators and even increased risk from wildfire during heat-waves. These should be recognised and addressed through preparation of a Climate Adaptation Plan.

Protection of the Local Environment: Chemical additives to fracking fluids are strictly controlled and assessed on a site by site basis. Transparency by shale gas operators can help to secure public confidence. Flowback and produced water contain a number of potential contaminants. Treatment is dependent on their composition but there are regulatory frameworks in place in the UK to prevent pollution of the local land and water environment. These risks need to be assessed and managed effectively. Seismic monitoring should be used to assess any potential impact on well integrity. Reusing fracking fluid on site is potentially a more sustainable option and should be the preferred approach wherever possible.

In all aspects of the shale gas recovery process the opportunity exists for solutions which are both sustainable and innovative. Whilst the existing regulatory arrangements are very robust, the importance of water in the process should not be underestimated, and given the recent 'drought to flood' paradigm, early planning is essential.

Acknowledgements

Permission by the Chartered Institution of Water and Environmental Management (CIWEM) to refer to and use material from the Report Shale Gas and Water: An independent review of shale gas exploration and exploitation in the UK with a particular focus on the implications for the water environment (CIWEM, January 2014) is gratefully acknowledged.

Will Europe meet the targets of the Water Framework Directive (WFD) set until 2015?

Water is a precondition for human, animal and plant life as well as a vital economic resource. Water also plays a fundamental role in climate regulation. However, the aquatic environment faces many serious challenges such as water scarcity, pollution and ecosystem degradation.

The main aim of EU water policy is to ensure that throughout Europe a sufficient quantity of good quality water is available for people`s needs, the economy and for the environment. Since the 1970s, through a variety of measures, the EU has worked hard to create an effective and coherent water policy.

The EU Water Framework Directive (WFD), adopted in 2000, takes a pioneering approach to protecting water based on natural geographical and hydrological formations: river basins. Integrated river basin management adopts a holistic approach to protecting the whole body of water, its source, tributaries, and river mouth. The Directive obliges Member States[1] to draw up river basin management plans (RBMPs) to safeguard each of the 110 river basin districts, 40 of which are international and cross borders, covering about 60 % of EU territory. It is implemented through six-year recurring cycles, the first of which covers the period 2009-2015.

The overall aim of the WFD is to achieve ‚good status' for all EU waters, including fresh, transitional (river mouths) and coastal waters by 2015. ‚Good status' means both 'good ecological status' and 'good chemical status'. But in spite of improvements in recent years, achieving this goal is still some way off.

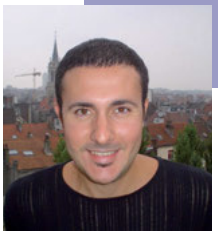
The Commission published its third WFD implementation report in 2012. It found that, good ecological status' is currently achieved in only 43 % of surface water bodies (this may increase to 53 % by 2015, on the basis of the measures planned by Member States) . Therefore, a 47 % shortfall is expected in 2015 if no further action is taken. There is a need to step up actions to tackle old and emerging challenges that include water pollution, over-abstraction and hydromorphological changes, which are all pressures on the aquatic environment due to industry, agriculture, urban developments, flood defences, power generation, inland water navigation, recreation, wastewater discharge and more.

Although monitoring indicates that the chemical quality of EU water bodies has improved in the last 30 years, the chemical status of 40 % of surface waters is still unknown, showing that monitoring is inadequate in many Member States. Monitoring obligations thus need to be fully fulfilled.

1 The EU has more than 100 000 surface water bodies: 80% of them are rivers, 15% lakes and 5% coastal and transitional waters.

Dr. Nicola Notaro is Deputy Head of the Water Unit C1 in DG Environment at the European Commission (EC). He has previously worked as Legal Adviser and then Team Leader for the international climate negotiations in DG Environment.

His responsibilities include: Water Framework Directive, Groundwater, Chemicals in Water, Floods Directive, Water Scarcity and Droughts, Water and environmental resources vulnerability.



In response to the continuing challenge of delivering the EU's policy goals, the European Commission adopted ‚The Blueprint to Safeguard Europe`s Water Resources` in November 2012, a Communication based on an extensive evaluation of existing policy, and containing a wide range of proposals to improve implementation and address shortcomings in current legislation[2]. The ‚Blueprint' is the water milestone on the 2011 Resource Efficiency Roadmap and, with a time horizon closely related to the EU's 2020 strategy, it sets out to tackle the obstacles holding back progress, through its focus on better implementation, more integration of policy objectives and filling in remaining regulatory gaps. It identifies key themes like land use, water pollution, water efficiency and resilience, and better governance.

The Blueprint highlights, inter alia, the importance of water efficiency measures (pricing, labelling, re-use, Ecodesign, etc.) as means of saving water (and energy). It also stresses the need to put in place reliable water accounts that fully factor in the ecological flow, i.e. the amount of water needed for the ecosystems to continue to thrive. Moreover, it suggests implementing natural water retention measures, an example of green infrastructure, and reducing soil sealing to limit the negative effects of floods and droughts thereby reducing hydromorphological pressures. In addition, the Blueprint recalls the need to further progress towards the full implementation of EU Urban Wastewater, Nitrates, Pesticides and Industrial Emissions legislation in order to achieve water policy goals which also need to be better reflected in EU funding policies, particularly in the CAP and Regional funding.

Tackling these challenges holds significant potential to boost the competitiveness and growth of the European water sector. There is also potential for green growth in other water-related sectors where innovation can increase operational efficiency. Innovation is a key tool to support the policy options developed by the Blueprint, and the Strategic Implementation Plan (SIP) adopted by the European Innovation Partnership (EIP) on Water in December 2012 sets out priority areas where solutions are needed. These include water reuse and recycling, water and wastewater treatment, and water and energy (as energy production necessitates considerable water quantities and may negatively impact, directly, or indirectly, water quality). The Partnership was launched by the Commission and brings together actors from sectors including the water industry, SMEs, the research community, local governments, major water users and finance to speed the development and uptake of innovative solutions to water challenges in Europe and beyond.

The Blueprint proposals, which have been endorsed by EU Member States in the conclusions of the EU Council of Ministers in December 2012, are now reflected in the Work Programme of the Common Implementation Strategy under the Water Framework Directive. This is an open and participatory process in which the Commission, Member States and stakeholders work together to improve the implementation of EU water policy, especially in view of the upcoming 2015 update of the Member States' RBMPs.

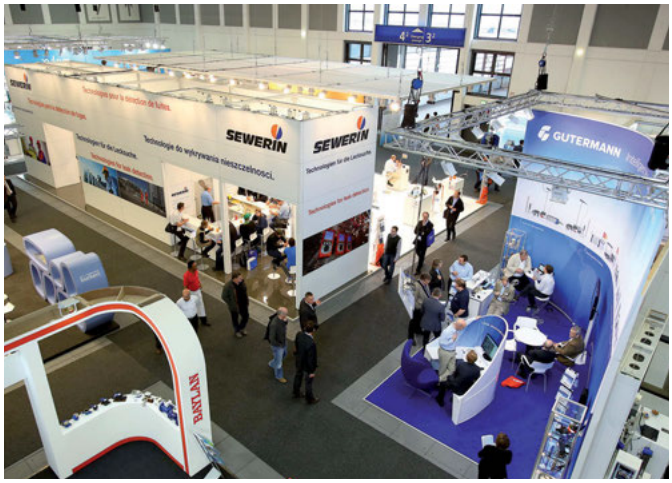
In preparation for that update, Member States have to hold in 2015 extensive consultations with the public and interested parties to identify the problems, the solutions and their costs, to be included in the plans. Public support and involvement is a precondition for the protection of waters. The 2015 RBMPs will also have to address the recommendations for improvement that the Commission addressed to the Member States in its 2012 implementation report and that where discussed bilaterally with all Member States in the last 2 years. In this respect, if appropriate action is not taken, enforcement action from the Commission may follow.

The Water Blueprint has set the EU water policy agenda for years to come. Its measures should contribute to the protection of the EU's water resources; help in addressing biodiversity loss and the degradation of ecosystem services; and support efforts to adapt to climate change while also sustaining EU efforts to become a more resource efficient economy based on green growth.

2 The Blueprint to Safeguard Europe's Water resources – Communication from the Commission (COM(2012)673)

WASSER BERLIN INTERNATIONAL enhances trade fair concept and creates added value for exhibitors and trade visitors

WASSER BERLIN INTERNATIONAL – the International Trade Fair and Congress for Water and Wastewater – has enhanced its trade fair concept, thus creating added value for exhibitors and trade visitors. From 24 to 27 March 2015 WASSER BERLIN INTERNATIONAL will be organised in an even more structured format.



In future, the hall layout of the **trade fair** will reflect the economic cycle of the water industry, whose 360-degree approach symbolises the principle of sustainability as well as demonstrating that WASSER BERLIN INTERNATIONAL showcases products, services and solutions from all parts of the water industry. Trade visitors will be able to find their way around the fair more easily.

In 2015, for the first time, the WASSER BERLIN INTERNATIONAL **Congress** will take on the format of a Hall Forum and will thus become an integral part of trade fair events. No extra charges will be made for the congress. The concept of the congress will be more tightly structured. On 24 and 27 March 2015 at one session respectively, and on 25 and 26 March 2015 at two sessions respectively, the focus will be on the latest water industry and policymaking topics at national and international level. In addition, specialist symposiums dealing with individual topics in greater detail will be taking place in close coordination with trade fair events.

Matthias Steckmann, director at Messe Berlin GmbH: "WBI is Germany's international marketing platform devoted to the topic of water. The response to our conceptual changes has been outstanding. In particular this is reflected in the high level of bookings, which currently exceeds the figure for the same period before the last event."

New features will include a Board Meeting Area, which will be set up in the Palais am Funkturm next door to WASSER BERLIN INTERNATIONAL. Members of WASSER BERLIN, the organisation which sponsors and promotes the event, will be able to hold their general meetings, annual conferences and other internally organised events parallel with the specialist events at WASSER BERLIN INTERNATIONAL.

NO DIG BERLIN – International Symposium on Pipeline Construction – Schaustelle WASSER BERLIN INTERNATIONAL – Competence Centre for Pipeline Construction

Following the successful debut of NO DIG BERLIN at WASSER BERLIN INTERNATIONAL 2013, NO DIG BERLIN will be held for the second time from 24 – 27 March 2015 as part of this year's WASSER BERLIN INTERNATIONAL. Leading companies such as Herrenknecht, TRACTO-TECHNIK, Hermes Technologie, Frisch & Faust Tiefbau, Stehmeyer + Bischoff, HOBAS and BKP Berolina are just some of the exhibitors in this independent trade fair segment and will be official NO DIG BERLIN sponsors.

Trenchless technology represents an environmentally sound, low-cost as well as groundbreaking alternative wherever underground pipelines are modernised or installed.

Taking place on 24 and 25 March 2015, The two-day NO DIG BERLIN Symposium is organised by the GERMAN SOCIETY FOR TRENCHLESS TECHNOLOGY (GSTT) and for the first time will be held parallel with the International Symposium on Pipeline Construction (ILBS) in Hall 1.2.

A day later on 26 March 2015 the focus will be on practical aspects at **Schaustelle Wasser Berlin International**, which showcases pipeline construction, drinking water extraction and wastewater treatment methods. Those taking part will be able to

find out locally about modern and innovative methods and the ways in which building projects are realised.

Under the aegis of Rohrleitungsbauverband e.V. (rbv) and in collaboration with all the leading pipeline construction associations, the **Competence Centre for Pipeline Construction**, which has become an established event, will again be taking place at WASSER BERLIN INTERNATIONAL 2015.

New at WASSER BERLIN INTERNATIONAL: FLOOD MANAGEMENT BERLIN

From 24 to 27 March 2015, under the heading of 'FLOOD MANAGEMENT BERLIN', WASSER BERLIN INTERNATIONAL – the International Trade Fair and Congress for Water and Wastewater – will be presenting a new trade fair section with an accompanying symposium. FLOOD MANAGEMENT BERLIN will provide trade visitors with a comprehensive overview of products, services and solutions dealing with flood protection, water engineering and disaster management.

In addition to NO DIG BERLIN, a new independent section has been set up under the heading of FLOOD MANAGEMENT BERLIN. This provides trade visitors with a comprehensive overview of products, services and solutions dealing with flood protection, water engineering and disaster management.

Extreme weather events such as heavy and continuous rainfall and its effects – storm surges, overflowing rivers and flash floods – are increasing evidence of climate change. The German Insurance Association has conducted a survey in collaboration with leading climate scientists. According to its forecasts, by the end of this century the amount of damage along the rivers Rhine, Elbe, Ems and Danube will double or even treble, depending on the trajectory of climate change. Insurance company analysts tasked by the rating agency Fitch have estimated that in Germany the June 2013 floods caused economic damage worth around twelve billion euros, to which insurance claims of three billion euros can be added. The cost of repairing road, rail and other infrastructural damage is not included in these figures.

Representatives of national, state and local government are called upon to confront the task of flood management. They can no longer depend exclusively on the private sector to deal with this issue. As a basic formula, implementing preventative flood management measures costs less than carrying out repairs caused by frequently recurring floods. FLOOD MANAGEMENT BERLIN targets the following audiences: employees and decision-makers in ministries at federal and state level, local councils at urban, district and municipal level, members and employees of associations for ground, water and dykes, employees of international river management commissions, as well as engineers and planners of flood protection systems.

Cornelia Wolff von der Sahl: "As a trade fair in Berlin devoted to the topic of water, WASSER BERLIN INTERNATIONAL is the logical venue for holding FLOOD MANAGEMENT BERLIN, due on the one hand to its proximity to political decision-makers and on the other to its 360-degree concept. It provides trade visitors with an overview of all the products, services and solutions related to this topic, such as pumps, wastewater treatment plants and the relevant construction companies."

Dr Fritz Holzwarth appointed as new managing director of WASSER BERLIN e.V.

On 1 March 2014 Dr. Fritz Holzwarth was appointed as the new managing director of WASSER BERLIN e.V. He succeeds Arnd Böhme who held the post of managing director for many years. From 1991 Dr. Fritz Holzwarth was at the Federal Ministry for the Environment, Nature Conservation and Reactor Safety (formerly the BMU, as of December 2013 the BMUB), where in 1996 he became head of the Water Management Department. He held numerous senior water management posts at government level as well as in Europe and worldwide and was responsible for inland waters and ocean protection.

Commenting on his appointment as managing director of WASSER BERLIN e.V. Dr. Fritz Holzwarth said: "I would like to contribute to the success story of WASSER BERLIN INTERNATIONAL."

WASSER BERLIN e.V. is an umbrella organisation and has 23 members, among which are water industry associations and institutions. Chairman of the board is Jörg Simon, who is also board chairman of Berliner Wasserbetriebe. Since it was founded in 1963 WASSER BERLIN e.V., with the help of its members, has contributed to promoting WASSER BERLIN INTERNATIONAL. WASSER BERLIN e.V. organises and holds the WBI Congress.

Directory of Members

Albania

Water Supply and Sewerage Association of Albania (WSSAA)

President
Spartak Kovaçi

Executive Director
Philip D. Giantris

EWA Council Representative
Petrit Tare

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Main activities
The Association is a professional, non-profit organization of water supply and sewerage professionals with a Mission Statement founded on two goals:

- To improve the capacity of the people, who work to deliver water supply and sewerage services in Albania;
- To represent the interests of water supply and sewerage utilities and other professionals in the water sector in Albania regarding laws, decrees, and regulations that may be proposed for action by the Parliament or by the Government.

The Association traditionally serves the water sector through outreach programs consisting of its award winning Children's Water Awareness Program; University Student Summer Internship Program; bilingual newsletter and website; routine training programs; Annual Conference and Exhibition; IWA Biannual Utility Management Conference and a Young Water Professionals section. The Association is also involved in medium and large scale project grants that provide value to knowledge sharing in the water sector and opportunities to young professionals to gain more experience in their profession.

Challenging Topics
The water supply and sewerage sector in Albania is still in a major transition as the Government continues to implement its decentralization programs. These challenges are:

- Regionalization of water supply and sewerage services to improve performance upon economies of scale.
- Focus on commercialization of utility management to achieve full cost recovery from revenues.
- Development and implementation of a sustainable, national training program to improve the capacity of the sector, leading to certification as a qualification for employment in the sector.

Austria

Österreichischer Wasser- und Abfallwirtschaftsverband (ÖWAV)
Austrian Water and Waste Management Association

President
HR DI Johann Wiedner

Executive Director
GF DI Manfred Assmann

EWA Council Representative
Baurat h.c. DI Dr. Werner Flögl

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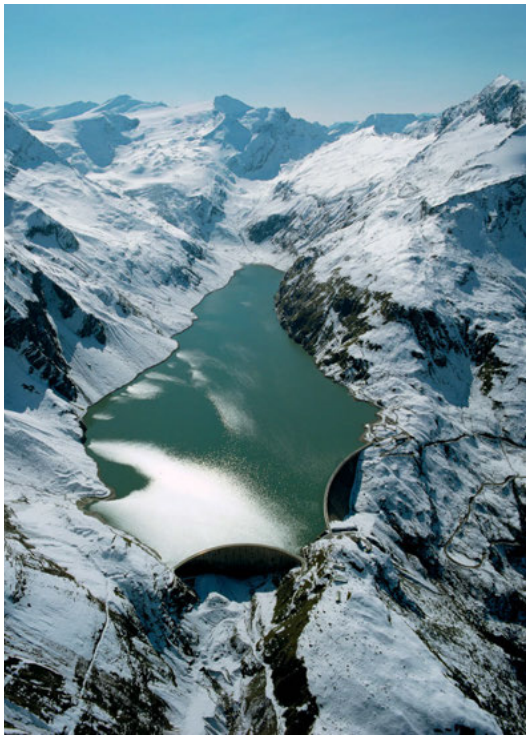
Main activities
The Austrian Water and Waste Management Association (ÖWAV) is a voluntary collective of all parties interested in water and waste management in Austria, which leads to the exchange of experience in economy, administration and science. It is considered as an "independent counsellor" with the goal of achieving sustainable objectives of the water, wastewater and waste management in Austria.

Challenging topics

- Climate change
- Buildings and Water
- Sewage sludge platform
- Maintenance of Sewage Systems
- Courses and advanced training for the staff of water treatment plants and waste management facilities



Belgium
VLARIO

Director
Mrs. Wendy Francken

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Main Activities
VLARIO is an independent non-governmental and non-profit organization in Flanders (Belgium)

- VLARIO is the consulting platform and information and knowledge centre for Flemish sewer systems with the following targets
- VLARIO offers an independent platform for experts of rainwater, wastewater and integral water management
- VLARIO collects knowledge through continuous consultation and exchange of experience with all market players, national and international
- VLARIO propagates this knowledge via publications and the organization of seminars, workshops, lectures and study clubs
- VLARIO supports the ambition of Flemish towns and cities in purifying quality and applying the 'Principles of integrates sewage management'
- VLARIO has 450 members, such as most of the Flemish towns and cities, regional authorities, Aquafin, consulting engineers, contractors and industrial companies.

Bulgaria
Bulgarska Asocia po Vodite
Bulgarian Water Association (BWA)

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Ivan Ivanov, MEng

EWA Council Representative
Prof. Dr. Petar Kalinkov

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Main activities
BWA is a non-governmental, non-profit organization whose main fields of interest are water supply and wastewater disposal and treatment, as well as management, preservation and utilization of water resources. It takes part in discussions related to new regulations and develops expert appraisals, standpoints and strategies in its field. BWA organizes workshops, conferences, round tables and is also involved in the training of water/wastewater operators. As at October 1st 2013 the Association has 124 corporate and 314 individual members.

Challenging topics

1. Water loss reduction
2. Water Act amendments implementation
3. Education and training of water/ wastewater operators
4. Assistance to the development of Strategy for Water Supply and Sanitation Sector Development
5. Urban water infrastructure rehabilitation
6. Waste water treatment plants construction
7. Benchmarking in the Bulgarian water sector

Croatia

Croatian Water Pollution Control Society (CWPCS)

President
Bojan Zmaić, M. Sc.

Vice President
Mara Artuković, D. Sc.

EWA Council Representative
Zoran Nakić, D. Sc.

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Main activities

The CWPCS is promoting water protection and sustainable use of water. It has a key role in practical education of young experts in a different field of water related issues, e.g. through the organisation of practical seminars on different technical aspects of water management. The CWPCS organises lectures of national and international experts in Croatia, as well as scientific conferences, like the "Waters in Protected Areas", held in Dubrovnik in 2007 or "Modern Methods of Storm Water Drainage in Urban Coastal Areas", held in Rijeka in 2009.

Members of the CWPCS are actively involved in preparing national and international projects related to water protection and water management. They are also actively involved in the work of EWA and participate in the work of EU working groups of Common implementation Strategy of the Water Framework Directive.

Close cooperation with other national organisations, exchanging experience, improving relations and solving neighbourhood problems.

Challenging topics

1. Encouraging young experts and scientist to be more actively involved in the work of CWPCS.
2. Establishment of ad hoc working groups consisting of highly motivated experts whose work on a specific water related issue would be very intensive and of limited duration.
3. Transformation of CWPCS into a professional institution capable of spreading the information, knowledge and competence gained in relation to water policy, implementation of new technologies.
4. Organizing practical courses for WWTP and sewage maintenance personnel

Czech Republic

Asociace pro vodu ČR
The Czech Water Association (CzWA)

President
Dr. David Stransky

EWA Council Representative
Prof. Jiří Wanner, MSc., PhD., DrSc.

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Main activities

The CzWA is the association representing Czech specialists and companies working in the fields of wastewater, waste and water management and quality control of surface waters. The main activities of the association cover both technical-scientific subjects and the economic and legal aspects of water environment protection. The association provides consultancy to the state and local authorities and to private subjects. The CzWA organizes professional seminars and conferences on both national and international level and provides training courses on different levels.

Challenging topics

In 2012 CzWA established two new specialist groups: Energy and wastewater and Service life and rehabilitation of water infrastructure. Thus, the number of CzWA specialist groups has reached fourteen and the groups cover most of the professional topics in the water sector. The CzWA has finished its conversion from initially wastewater association to association of all Czech water professionals and has become an adequate member of international organizations like EWA or IWA.

CzWA wants to continue or to improve the cooperation with water associations in neighbouring countries. CzWA has contract on cooperation with AČE in the Slovak republic, ÖWAV in Austria and DWA in Germany. CzWA has also established good working contacts to MaSzeSz in Hungary. The cooperation with neighbouring association helps to keep the standard of CzWA biennial conferences on high scientific and technical international level. The international contacts of the CzWA makes the association more attractive for young water professionals (YWP) who are now forming a significant fraction among the CzWA individual members.

Denmark

Danish Water Forum (DWF)

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Main activities

Danish Water Forum (DWF) is a network of Danish water organisations aimed at highlighting expertise and knowledge and facilitating concerted actions. The competences and high standards of its members make DWF an excellent entry point to the Danish water sector and its services and expertise within virtually all aspects of water industry, technology, science and management. DWF represents:

- Contractors and manufacturers
- Water companies and Consultants
- Research institutions
- Governmental and other public institutions and NGOs

The unique member blend of RDI, industry, organisations and public bodies gives DWF an integrated knowledge about all aspects of the entire water sector, including issues relating to the environment, agriculture, energy, and health. Danish Water Forum has 2 main areas of interest, which are 1) RDI and entrepreneurship in the sector and 2) to build partnerships across the sector to provide sustainable solutions and to build international partnerships through international organisations.

Challenging topics

1. The political focus in the water sector in Denmark is to develop sustainable solutions and technology which at the same time address the various issues in relation to water in Denmark and also can be applied internationally and thereby create growth for Danish companies and the Danish society. DWF supports that political strategy by working together with governmental export entities and with companies and institutions with international ambitions.
2. The global climate changes will have a tremendous impact on specific regions in the world, especially in the poor countries. DWF will work for ensuring that donor organisations draw the climate change into their planning of donor funded projects to ensure "climate-safe" project results.

Estonia

Eesti Veeühing
Estonian Water Association

President
Arvo Järvet

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Main activities
The Estonian Water Association promotes and facilitates evolution of legislation, terminology, education, science and engineering of water management.

It offers opinions on Estonian water management problems, arranges meetings, events and conferences related to water usage, surface and groundwater protection and others water management sectors. Estonian Water Association is an active partner in River Basin Management Planning process. During the recent years numerous public consultations on draft planning documents have been organized in different regions in the country as well as excursions to relevant objects/locations of interest. Traditional events held every year include the Annual Meeting, conference for celebrating the World Water Day, two days excursion in the summer and an autumn seminar.

Finland

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Water Association Finland

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Main activities
The Water Association Finland is a non-governmental body with some 500 individual members and 20 corporate members, founded in 1969. The purpose of this body is to improve and distribute knowledge and promote professional networking in Finland and abroad.

Purpose of the association is to improve and disseminate knowledge and promote professional networking in Finland and abroad on hydrology, limnology, water ecology, fisheries, water supply, hydraulic engineering, water pollution control and water legislation. The core issues are mostly dealt with by standing committees for History, Wastewater, River basins & fisheries, Water quality, Groundwater and Water supply & sewerage.

Challenging topics

1. The renewed Finnish water legislation.
2. Implementation of the EU Water Framework Directive.
3. Climate change effects on water management and water environment.

France

Association Scientifique et Technique pour l`Eau et l`Environnement association (ASTEE) ("Scientific and Technical Association for Water and Environment")

President
Pierre-Alain Roche

Executive Director
Célia de Lavergne

EWA Council Representative
Jean-Philippe Torterotot

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Main activities
Since its founding in 1905, the "Association Scientifique et Technique pour l'Eau et l'Environnement (ASTEE)" has been a privileged centre point for the exchange of technical, scientific and administrative information between the various persons and organisations involved in the design, production and operation of urban and rural equipments and infrastructures, with a strong emphasis on environment and hygiene related utilities. Water ecosystems and resources are also addressed in a more global view. The association welcomes all persons and organisations involved: industry, consultants, operators, academics and scientists, technicians and local communities, hygiene specialists, doctors, regulators, government and local community engineers, administrators, managers.

ASTEE handles all the different aspects of urban engineering and rural engineering, in relation to utilities, infrastructures, and natural assets: water, drainage, waste, hygiene, disinfection, urban planning, habitat, traffic, viability, transportation, lighting, urban amenities, cleanliness of public places, atmospheric pollution, noise, hydrology, water supply, corrosion, sanitation, urban networks, development plan, surface management etc…

ASTEE's aim is to promote studies and research work for the environment, public hygiene, urban development, rural development; to favour the exchange of ideas and information between all involved parties.

Challenging topics

1. Creation of a workgroup across technical committees for working on performance indicators of water and sanitation utilities
2. Contribution to the preparation of the World Water Forum 2012 in Marseille, over various topics, joining forces with all French water stakeholders and parties to welcome all the participants and visitors
3. Further development of the collaboration with other French water association, in order to work together on key issues

Germany

Deutsche Vereinigung für Wasserwirtschaft, Abwasser und Abfall e. V. German Association for Water, Wastewater and Waste (DWA)

President
Bauass. Dipl.-Ing. Otto Schaaf

Executive Director
Bauass. Dipl.-Ing. Johannes Lohaus

EWA Council Representative
Dipl.-Ing. Karl-Heinz Brandt

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Main activities
The DWA – German Association for Water, Wastewater and Waste – is intensively committed to the development and distribution of a secure and sustainable water management. It acts as a politically and economically independent organisation in the field of water management, sewage, waste and soil protection.

DWA provides professional competence regarding standardisation, professional training and information towards the public. Approximately 14,000 members represent the experts and executives from local authorities, universities, engineering offices, municipalities and enterprises. Main emphasis of its activities is placed on the acquirement and update of a consistent technical set of rules and standards as well as cooperation in the formulation of technical norms on national and international level. Furthermore, DWA also offers professional training as well as further vocational training.

There are not only technical scientific topics involved, but also economic and legal interests of the environment and water protection are concerned.

Hungary

Magyar Szennyvíztechnikai Szövetség (MaSzeSz)
Hungarian Wastewater Association

President
DI. Károly Kovács

Executive Director
Dr Dezső Dulovics PhD

EWA Council Representative
DI. Károly Kovács

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Main activities
The Hungarian Wastewater Association was founded in 1997. The Association has around 300 individual, institutional and company members. The members are mostly design engineers, operators, professors from several universities dealing with water, wastewater technologies and sewage systems. The main activities and objectives of the Association are:

- Support technical and scientific cooperation between members
- Provide practical, technical and scientific information towards members, municipalities and authorities
- Support young scientists
- Cooperate with the government on development of regulations
- Cooperate with other civil organisations in water related questions
- Organising national and international conferences
- develop, edit, distribute, and provide educational services for technical and cost comparison guidelines

Challenging topics

1. Strengthen the cooperation with municipalities as decision makers on the public water sector
2. Strengthen the communication towards civil players in the water sector
3. Strengthen the exchange of experiences between regions and neighbouring associations

Latvia

Latvian Water and Waste Water Works Association

President
Andis Dejus

Executive Director
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Andis Dejus

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Main activities
The Latvian Water and Wastewater Works Association is a non-profit organization which cooperates with related organiza-tions. 27 water and wastewater enterpris-es are members currently, plus 4 Associ-ated members- companies working in the field of water management, pipes and fittings construction, environment and consulting.

The target program of the Association is to ensure the provision of stable high quality water supply and wastewater services to the customers in the most environmentally safe manner.

The main problems, which still need EU financing, are; water/sewer network reconstruction, sewage sludge treatment/management, innovations and solu-tions for energy savings. Future challenges relate more with energy efficiency solutions, to improve the overall efficiency of water enterprise and services for the customers.

Challenging topics

- Cooperation with governmental organizations, municipalities, devel-opment of water policy (Water man-agement law development)
- Cooperation and experience sharing with EWA and neighbouring countries
- Organization of specific sectorial courses, seminars, conferences

Technical and economic data of association members. (LUKA, 2012.)	
Length of water/ wastewater network (km)	~ 6,348
water	~ 3,367
sewage	~ 2,981
Clean water intake (cubic meters per day)	~ 212,860
Sold water (cubic meters per day)	~ 152,158
Customers	~ 1,691,054

Lithuania

Clean Water Association (CWA)

President
Mr. Vidas Bonkys

EWA Council Representative
Mr. Vidas Bonkys

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Main activities

The Clean Water Association (CWA) is a non-governmental environmental organization founded on May 31, 1996. The CWA's mission is the reduction of pollution of surface and ground water.

The main goals are:

- Environmental education aimed at the formation of an understanding by the population of the problems regarding water resources.
- The improvement of the design, construction, operation, and maintenance of facilities for the prevention of pollution of water bodies, primarily, of the plants for the treatment of the wastewater.
- The rise of professional qualification of specialists and organizations working in the field of water pollution control.
- The quest for and support of the right and effective governmental strategies and policy in the sphere of protection of water bodies.
- The assistance in the creation and development of the production of technological equipment for the treatment of wastewater in Lithuania.
- The build-up and strengthening of the ties of Lithuania's environmentalists with the counterpart organizations, associations, and specialists of other countries.
- The support for the global efforts aimed at the protection of water against pollution.

Luxembourg

Association Luxembourgeoise des Services d'Eau (ALUSEAU)
Luxembourg Association of Water Services

President
Raymond Erpelding

EWA Council Representative
Raymond Erpelding

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Main activities

ALUSEAU is the national association of water services in the Grand-Duchy of Luxembourg, regrouping members of the drinking water sector, the wastewater sector and other public actors active in water management. ALUSEAU is a politically independent and non-profit making association. The main objectives of the association are to promote the common interests of all authorities and public services dealing with water management. To that effect ALUSEAU aims at advocating the study of all scientific, technical, economic and administrative problems relating to drinking water supply and sewage collection and treatment, promoting a suitable management of the water resources of the country. ALUSEAU is also representing its members in international associations dealing with the same objectives just described.

The core business of the association is to:

- Keep contact between the different water services
- Keep contact with the national authorities
- Being involved in the outworking of national directives

Challenging topics

1. The European water framework directive was transposed in 2008 into national legislation. ALUSEAU helps the national authorities to transpose and implement the new water law and to introduce the cost recovery principle in water pricing.
2. In 2014 starts the second cycle of the elaboration of the Management Programs (2016-2021) regarding the Water Framework Directive. ALUSEAU will be strongly involved in the different working groups organised by the National Water Administration.

Norway

Norsk Vannforening
Norwegian Water Association (NWA)

President
Anette Æsøy

Executive Director
Tone Margrethe Karlander Juel

EWA Council Representative
Harsha Ratnaweera

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Main activities

The Norwegian Water Association (NWA) is an independent non-governmental and non-profit organisation dealing with the management and improvement of the water environment. The NWA provides a forum for discussion of key technical, scientific and policy issues on water covering both water resources and water quality. Through this exchange of knowledge, the NWA significantly contributes to sustainable water management in Norway. The NWA has about 900 individual and 450 corporate members.

The implementation of the Water Framework Directive in Norway is one of the core activities. Furthermore, Water Quality Issues, Watercourses and Coastal Areas, Aquatic Ecosystems and Biodiversity, Water Quality Monitoring, Water Supply and Health Effects, Sanitation, Impacts of Hydropower Development, Effects of Long-transported Airborne Pollutants, Effects and Adaptation of Climate Changes are activities which are just as important to the NWA.

Challenging topics

1. Continuing the development of the administrative and organisational capacity of the association.
2. Establish new regional committees in order to spread the activities of the association in the major regions of Norway.
3. Recruiting new members by information and more visibility of the association.

Portugal

Associação Portuguesa de Engenharia Sanitária e Ambiental (APESB)

President
Prof. António Jorge Monteiro

EWA Council Representative
Prof. José Saldanha Matos

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Main activities

The Portuguese Association for Sanitary and Environmental Engineering (APESB) is a non-profit, scientific and technical association, founded in 1980, for an indeterminate period of time, recognised as a corporate body of public interest since March 1990.

APESB has the following objectives:

- To be a national body especially oriented to the study, analysis and discussion of aspects related with water supply, drainage, treatment and final disposal of wastewater and the collection, treatment and final disposal of solid waste, in order to contribute to the implementation of better, feasible and sustainable solutions.
- To foster the technical and scientific exchange, including technology transfer and training, in the fields of water supply, drainage and treatment of wastewater as well as solid waste, at the national level and in the Portuguese-speaking countries.
- To contribute to the scientific and technological development of subjects related to water supply, drainage, treatment and final disposal of wastewater and collection, treatment and final disposal of solid waste.

Furthermore APESB has the following core activities:

- Water Treatment and Supply
- Wastewater Systems
- Water quality and pollution control
- Solid waste (collection, treatment and disposal)
- Health related subjects

Challenging topics

- Health related topics
- Climate changes and water and wastewater systems
- Water reuse

Serbia

Serbian Water Pollution Control Society (SWPCS)

President
Dr Milan Dimkić

Executive Secretary
Mr. Aleksandar Djukić

EWA Council Representative
Mr. Aleksandar Djukić

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Activities
Serbian Water Pollution Control Society (SWPCS) is a non-profit independent organisation of experts in water sector which was established in 1966. The main objective of the Society is to create and foster the network of leading water professionals through the provision of services and products to the members, including conferences, publications and support for member groups. In addition, to represent the views of members in the national and international forums aimed at advancing best practice in the sustainable water management.

Challenging topics
1. Provide expert's opinion on new legislation and policies.
2. Provide specific training on critical issues in the water sector (implementation of WFD, water resource management, wastewater and sludge management, diffuse pollution, etc.).
3. Strengthen the cooperation of water related NGOs in Serbia and in the region.

Slovak Republic

Asociácia čistiarenských expertov SR (AČE SR)
Association of the Wastewater Treatment Experts of the Slovak Republic

President
Assoc. Prof. Ing. Igor Bodik, PhD

EWA Council Representative
Prof. Ing. Miloslav Drtil, PhD.
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Main activities
AČE SR is the Slovak membership association which groups professionals acting in the fields of wastewater management and water protection. AČE SR covers all aspects of wastewater pollution control, collection, treatment and disposal; promote exchange of the latest skills, techniques and knowledge on all aspects of wastewater, water and sludge management. The mission is to enable the improvement of groundwater and surface water quality in an environmentally sustainable way. AČE SR disseminates the knowledge by means of conferences, workshops, specialized meetings, publications, electronic media and expert services.

Challenging topics
1. Wastewater and water management, water protection
2. Sludge management
3. Exchange of information and experience

Slovenia

Slovenian Water Pollution Control Association (SDZV)
Slovensko Društvo Za Zaščito Voda

President
Prof. Dr. Boris Kompare

EWA Council Representative
Prof.Dr. Jana Zagorc-Končan

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Activities
The purpose of the Association is to associate societies and individuals working in water and wastewater management, especially regarding quality issues. The main activities in this sector are to act in water pollution control, drinking and wastewater treatment; to develop consciousness of the importance of water preservation; to follow, study and work on water preservation and its uses, supplies of potable water, and dealing with used and waste waters; to inform and educate: professional, scientific and other public institutions by publications, lectures, meetings, sharing of experiences, excursions, by courses and similar activities and achievements in the field of water control; cooperation with similar local, foreign and international societies and organisations.

Challenging topics

1. The establishment of new Working Groups
2. Cooperation with administrative bodies on drinking water, wastewater treatment and excess sludge treatment
3. Attendance and participation at Slovenian annual conference "Water Days"
4. Cooperation with national and international bodies, associations and individuals on the water protection issues

Spain

Asociación para la defensa de la calidad de las aguas (ADECAGUA)
Association for Water Quality Protection

President
Manuel Suarez Novoa

EWA Council Representative
Dr. Manuel Soler

Managing Director
Benito Reig

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Activities
ADECAGUA is a non-profit educational and technical association that is economically and politically independent of water quality experts. ADECAGUA is currently the Spanish member of the Water Environment Federation.

ADECAGUA has more than 300 members that are working with private or public companies, engineering firms, universities, consulting firms etc., but the association has mostly private members.

ADECAGUA developes and disseminates information concerting the different areas of water treatments and nature and also colaborates with two specialised journals in Spain. ADECAGUA regulary organises technical seminars and meetings that are announced on its webpage: http://www.adecagua.es where you can find all our news related to this fantastic world: the water.

Switzerland

Verband Schweizer Abwasser- und Gewässerschutzfachleute (VSA)

Swiss Water Association

President
Martin Würsten

Executive Director
Dr. Urs Kupper

EWA Council Representative
Olivier Chaix

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Activities
The VSA is the association representing Swiss specialists working in the fields of wastewater and water pollution control management. The main activities of the association cover technical, scientific, economic and legal aspects of water pollution control. The politically and economically independent association operates on a national level.

Central tasks of the association are the preparation and updating of technical standards and guidelines and professional training of members and staffs of sewage treatment plants

Challenging topics

- Micro pollutants
- Flood control and rehabilitation
- Management of infrastructure
- River basin management

United Kingdom

Chartered Institution of Water and Environmental Management (CIWEM)

President
Ken Shapland

Executive Director
Dr. Simon Festing

EWA Council Representative
Paul Horton

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Main activities
CIWEM is a professional institution with thousands of members many of them based overseas across 90 countries. CIWEM members work for regulators, government, consultancies, international organizations (such as World Bank, ADB) etc. The institution develops it's activities and thinking through technical panels which include: Water Resources; Water Supply and Quality; Air; Wastewater Management; Waste Management and Sustainability & Environmental Management. In addition CIWEM operates groups, Rivers & Coastal; WaPug – CIWEM Urban Drainage Group and a range of networks: Natural Capital; Faiths and Environment ; Climate Change; Contaminated Land; Arts and Environment;

CIWEM also produces two major journals Water & Environment Journal (WEJ) - http://www.ciwem.org/publications/journal/ and the online Journal of Flood Risk Management http://www.ciwem.org/publications/flood/.

CIWEM works with the Water & Climate Coalition and nominated NGO status at the UN Framework Convention on Climate Change.

Challenging topics

1. Climate change – impacts on water management
2. Training, Research and Development
3. Truly integrated environmental management
4. Biodiversity and integration of ecosystem management into policy
5. Diffuse pollution
6. Global Water Security
7. Achieving sustainable regulation
8. Population increases and changing consumption patterns

Corporate Members

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Description

Aquademica is a non-profit organization in Romania active in the environmental, water and waste water sector. The Romanian-German Foundation Aquademica was established in March 2009 by Aquatim, the regional water and wastewater operator in Timis county/ Romania, and the Municipality of Munich (Waste Water Department). Being an information and knowledge center, the Foundation promotes professional development in the environmental field and offers itself as a networking platform supporting specialists, professional organizations and companies. It also offers services aimed at providing sustainable solutions and excellence in the water and waste water sector such as: studies and surveys, environmental, economic and engineering expertise, cost comparison calculations, feasibility studies, consultancy and design.

The main advantages of Aquademica are national and international networking with universities, regional water and waste water operators as well as governmental bodies, and the transfer of good practices, already validated and acknowledged by our German partners. Pilot stations, donated by our German members, can be used for simulations of the existing technologies to be optimized, or for modelation of new technologies to be implemented.

Seminars and workshops promoted by Aquademica include theoretical support and practical simulations on the pilot stations. They can take place in any location in Romania or Germany and will be scheduled and organized in accordance with the trainees' needs and availability of the lecturer. The transfer of the German know-how is done directly by the German specialists or by using knowledge multipliers.

Aquatech

Aquatech's Global Events
Amsterdam RAI

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Description

Aquatech Global Events, established in 1964, organises the world's leading trade events on process, drinking and waste water technology in Europe, the USA, China and India. The well-established format covers the following segments: Transport and Storage, Water & Waste Water Treatment, Point of Use, Process Control Technology & Process Automation. Aquatech Global Events are visited by professionals from all parts of the water industry and attract policy-makers, top-level businesses, specialists, and those who apply the technology in practice.

More information can be found at www.aquatechtrade.com, the B2B portal for the water industry with an online buyers guide, list of companies.

Arihant
Water Park Equipment

Arihant Industrial Corporation Limited
Mr. Pranay Safari – Director

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Description

Arihant is one of the leading manufacturers of water park equipment globally. With an experience of 33 years, we have completed 275 installations in more than 41 countries including USA, Japan, UK, France, Greece and Finland. We are an ISO 9001-2000 Certified Company, best known for our quality products and services. We follow EN and ASTM quality standards. Equipped with best infrastructure and technology, we provide quality innovative products at economical prices. Our customers include some of the best names in entertainment and amusement industry across the globe.

Range of products/services:

- Our product includes: Multi Racer Slides, Body Slides (Open and closed body slides), Family Float Slides (Open and closed float slides), Thriller Slides, Themed Water Activity Play System, Water Movers and Wave Surfer.
- Service includes: Project Planning, Engineering and Theming, Manufacturing, Installation and Turnkey Development.

Association of Environmental Enterprises (KSZGYSZ)

Association of Environmental Enterprises (KSZGYSZ)
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Description

The Association of Environmental Enterprises (KSZGYSZ) is a non-profit organization, a professional business federation of the Hungarian environmental industry. The aim of the Association is to expand the information flow toward the environmental companies.

The Association has now 290 member companies and institutions covering all environmental sectors, like water, waste, clean air, noise management and remediation as well.

The Association develops services to provide information on the environmental industry by Internet databases, yearbooks of companies, organizes the international exhibition: ÖKOINDUSRTIA, national and international conferences mainly about water treatment and waste management. The Association provides information packages about the European environmental law and partnership and promotes the members international activities as well.

Examples of profiles and technologies of the members of the Association in water treatment:

- Drinking and waste water technology
- Sewage sludge treatment, optimization for waste water treatment plant
- Complex projects in water management and environmental protection
- Water loss detection, water network monitoring systems, identify and repair of hidden leaks
- „No-dig" inspection, cleaning and of pipelines
- Effective oil elimination from water surface, oil separation for rain water

Canal de Isabel II

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Description

Canal de Isabel II is a Public Sector Company depending on the Government of the autonomous region of Madrid. It tackles the comprehensive water cycle management throughout the region. It deals with all the processes intending to provide an appropriate management of water resources.

Water Quality

In order to guarantee the quality of water, Canal de Isabel II has established a strict surveillance program from the very origin of water supply to its arrival at the customer. This program is designed in such a way that it surpasses the standard of the laws currently in force for water for public use, both in Europe and Spain. The analyses for this program are carried out by the Canal technicians at a main laboratory in Madrid and eight peripheral ones located in Valmayor, La Jarosa, Navacerrada, Torrelaguna, Pinilla, Móstoles, San Fernando de Henares and La Poveda. These analyses are complemented by a real time vigilance station network.

Emschergenossenschaft and Lippeverband

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Description

The Emschergenossenschaft and Lippeverband is a water company for the catchment area of the Emscher River and the Lippe River and its tributaries. Emschergenossenschaft and Lippeverband is the largest Association for the disposal of wastewater in Germany.

Emschergenossenschaft and Lippeverband is a non-profit company in the form of a self-managed corporation under public law, controlled by its members.

The Emschergenossenschaft and Lippeverband plans, constructs and operates wastewater treatment plants, pumping stations, dikes, sewers and rain reservoirs and maintains the bodies of water in its catchment area. The Association coordinates plans closely with its members. River Basin Management as required by the EU Water Framework Directive has already been implemented on the Emscher and the Lippe rivers.

Endress+Hauser Messtechnik GmbH+Co. KG

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Main activities

Endress+Hauser is a global leader in measurement instrumentation and solutions for industrial process engineering. With over 10,000 employees worldwide, the Group generates annual net sales of 1.7 billion euros.

Company-owned sales centers and a network of partners guarantee competent worldwide support. Production centers in eleven countries meet customers' needs and requirements quickly and effectively. As a successful family-owned business, Endress+Hauser is set for continued independence and self-reliance in the future.

Endress+Hauser provides sensors, instruments, systems and services for level, flow, pressure and temperature measurement as well as liquid analysis and data acquisition. The company supports customers with solutions and services in automation engineering, logistics and information technology. Our products set standards in quality and technology.

Customers are primarily from the chemical/petrochemical, food & beverage, water/wastewater, life science, oil & gas, power & energy, renewable energies, primaries & metal, pulp & paper and shipbuilding industries. Endress+Hauser support its customers to optimize their process procedures while taking into consideration reliability, safety, economic efficiency and environmental protection.

Erftverband

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Description

The Erftverband is a non-profit organization under public law, with a focus on a healthy environment and the common good. The organisation is financed through the fees paid by its 250 members. The Erftverband and its 500 employees reconcile the different water-related interests of the regional players in a responsible and sustainable manner and with a sense of proportion. The core region in which the Erftverband operates is the 1,920 km2 catchment area of the river Erft. The catchment contains numerous tributaries and bodies of water along with the 107 km long river. Here the organisation purifies the domestic sewage produced by approximately 750,000 residents as well as the sewage generated by local trade and industry, which is equivalent to a waste load produced by another 450,000 people. Moreover, the Erftverband looks after a fragile natural region and protects the residential areas from flooding.

However, the reach of the organisation goes far beyond the Erft watershed. The entire area of activity comprises over 4,220 km2, covering the region affected by the brown coal mines of the Rhineland. The Erftverband monitors the complex relationships involving water supply and distribution, oversees groundwater resources, ensures the water supply and protects the numerous wetlands.

Gesellschaft zur Förderung der Abwassertechnik e. V. (GFA)
(Organisation for the Advancement of Wastewater Technology)

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Description

GFA is a service company for the German Association for Water Management, Wastewater and Waste (DWA). It publishes the journals of DWA: monthly KA – Abwasser, Abfall (KA – Wastewater, Waste), KW – Wasserwirtschaft (KW – Water Management) and every three months KA-Betriebs-Info (KA – Info for Operators). In addition, GFA publishes the DWA – Industry Guide (DWA-Branchenführer), a directory of companies in the environmental industries, focussing on water and waste. GFA cooperates, on behalf of DWA, with important trade exhibitions concerning water and waste.

HACH LANGE GmbH

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Description

HACH LANGE is a leader in water analysis. For more than 80 years, HACH LANGE has developed innovative solutions used to test the quality of water for municipal and industrial customers. HACH LANGE supplies tailor-made solutions for reliably monitoring wastewater, drinking water and process water.

The company history dates back to Berlin 1933 when Dr. Bruno Lange set up the company. Inventions such as the photometer and later on cuvette tests have revolutionised the field of analysis. HACH LANGE was born in 2004 when Dr. Bruno Lange joined forces with HACH, an American company specialising in electro and photochemistry.

Based in Dusseldorf and Berlin, HACH LANGE has research and production facilities in Germany, France, Switzerland, the USA and China. The company employs thousands of people across its subsidiaries in 25 European countries.

Manufactured and distributed worldwide, HACH LANGE systems are designed to simplify analysis by offering sophisticated on-line instrumentation, accurate field and laboratory equipment, high-quality prepared reagents, complete easy-to-follow methods, and life-time technical support. Special optimization solutions for water treatment facilities guarantee stable and most effective treatment processes.

Kocks Consult GmbH

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Description

KOCKS CONSULT GMBH is an independent company of planners and consultants established in 1946 by Friedrich Kocks, Dr. Ing., Dr. Ing. h.c. The company employs 200 engineers, architects, planners and environmental experts, collaborating to offer clients a wide range of services. Including KOCKS CONSULT's affiliated companies, there are 500 employees ready to tackle even the most complex tasks.

The range of services offered by KOCKS includes studies and surveys, ecological, economic and engineering expertise, cost and quantity calculations as well as feasibility studies, preliminary and final design. After successful conclusion of the actual planning work, KOCKS ENGINEERS draw up the necessary tender documents, carry out bid evaluations and supervise construction works and equipment installation. If required, KOCKS ENGINEERS provide project management including the financial transactions involved in it. KOCKS CONSULT GMBH also offers technical consultancy during the commissioning phase as well as training services for the client's staff in operating and maintenance.

Over the last 65 years, KOCKS ENGINEERS have been successful in accomplishing a great number of projects and thus gaining experience in various areas, such as Water, Environment, Civil Engineering, Transport and Training. KOCKS ENGINEERS and its associates operate in more than 20 offices all over the world.

WATER BERLIN INTERNATIONAL/Messe Berlin Ltd.

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Description

Messe Berlin is a service company specialized in the organization of international and national trade shows, exhibitions and conventions. With an annual program of nearly 80 international trade events Messe Berlin ranks as one of the world's top ten exhibition companies. WATER BERLIN INTERNATIONAL is one of the international meeting places for water and waste water industry organized by Messe Berlin Ltd. Berlin's central European location, especially its proximity to the growing eastern European market, offers exhibitors and trade visitors an effective and potentially very successful perspective. The next international trade fair and congress WATER BERLIN INTERNATIONAL will be taking place on March 24 - 27, 2015, in Berlin.

Product Groups of WASSER BERLIN INTERNATIONAL – trade fair with system

- Water extraction
- Water treatment
- Water distribution
- Wastewater transport
- Sewage & waste water treatment
- Water protection/food protection
- Construction services/NO DIG
- IT Services
- Quality assurance/science/research
- Industrial water use
- Energy production
- Energy efficiency/MRA

Figures of WASSER BERLIN INTERNATIONAL 2013:

- Exhibitors: 631 from 35 countries;
- Trade visitors: over 31,000;
- Conference participants: 2,012;
- Gross exhibition area: 38,930 m².

Messe München GmbH

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Description

Messe München International is one of the world's leading trade-fair companies. In Munich alone it organizes around 40 trade fairs for capital and consumer goods, and key high-tech industries. Each year more than 30,000 exhibitors and around two million visitors take part in the events held at Messe München, the ICM – Internationales Congress Center München and the MOC Veranstaltungscenter München. The leading international trade fairs of Messe München International are all FKM-certified, i.e. exhibitor and visitor numbers and the figures for exhibition space are collected in line with agreed standards and independently audited. In addition, Messe München International organizes trade fairs in Asia, Russia, the Middle East and South America. With six subsidiaries in Europe and Asia and more than 60 foreign representatives actively serving over 90 countries, Messe München International has a worldwide business network. The Group also takes a pioneering role as regards sustainability: It is the first trade-fair company to be awarded energy-efficiency certification from the technical inspection authorities TÜV SÜD.

IFAT, the world's most important trade show for innovations and services in water, sewage, waste and raw materials management, takes place from May 5 to 9, 2014 in Munich. The last event attracted 2,939 exhibitors from 54 countries and 124,200 visitors from 182 countries. After two shows under the name IFAT ENTSORGA, the show is returning to its original name of IFAT.

Already after the registration deadline at the end of April 2013, it is clear that IFAT will once again fill all 16 halls of the Messe München trade fair center as well as an even larger portion of the outdoor exhibition site. The share of exhibitors returning to the fair is more than 90 percent. In addition, demand for space is also very high. Due to the positive response to the last exhibition, IFAT appears to be more attractive than ever, and a number of new companies also want to showcase themselves at the next IFAT.

Besides the already extensive supporting program and the Open German Championship in Wastewater Engineering (organized by the DWA), IFAT 2014 will feature several premieres like a live demonstration area for recycling of building materials and a live demonstration are for recycling of car parts as well as the new set up platform "intelligent urbanization".

Further information are available at www.ifat.de.

Politecnico di Torino

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Description

The Politecnico di Torino (www.polito.it), descending from the Technical School for Engineers born in 1859, was founded in 1906. It is a centre of teaching and research excellence, and one of the most important universities in Europe for architecture and engineering studies, strongly committed to collaboration with industry. Politecnico di Torino offers diversified teaching: from Aerospace Engineering to Telecommunications, from Biomedics to Mechatronics, Environmental Engineering, Industrial Design, Automotive Engineering and Engineering for Cinema and Media Engineering, and a wide range of courses and specialization programs. Distance-learning programs are also available.

The internationalisation is one of the main aims of Politecnico. Over 89 international agreements allow students to obtain double degrees, and 2,000 foreign students per year are enrolled in different schools in the university, including PhD students. Six collaboration agreements with Chinese universities have recently been signed, and in the new buildings of the Tongji University of Shanghai (www.tongji.edu.cn) the Sino-Italian Campus has been inaugurated. New agreements have already been planned especially with Indian universities in the ICT sector.

Scuola Umbra di Amministrazione Pubblica Villa Umbra

Scuola Umbra di Amministrazione Pubblica Villa Umbra,
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Description

located in Perugia, Umbria Region Central Italy, has been operating for over 25 years on Environmental Resources related subjects in the framework of Provincia di Perugia, a Regional Government Public Body.

The main activities are the organization of Public Debates with local and National Officers, International and National Conferences, Training and Professional Courses at National and International level, on topics related to the Environment and Environmental Sustainability.

The training activities are organised in collaboration with Italian Universities, CNR- Water Research Institute, International Water Association; Italian Chemical Society- Environment Division; Education and Environment Italian Ministers, European Union, Professional Organizations etc..

The actors and participants to these activities are Officers, Scientists, Consulters, Industry and Public Control Bodies operators, involved in Environmental Themes such as Water, Wastes, Energy, Biotechnology, Climate, Transport Communication and Education.

Unie van Waterschappen (UvW)

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Description

The Unie van Waterschappen represents the interests of the Dutch Waterschappen. Waterschappen are decentralised functional governments, responsible for regional water management (quantitative and qualitative), flood defence and waste water treatment.

Unie van Waterschappen is faced with the following challenges:

1. Facing the challenges of climate change with regard to regional water management.
2. Financing Integrated Water Resource Management (see further under vision – water resources).
3. Further strengthening the position of the Unie van Waterschappen in Influencing relevant European legislation.

Association of Dutch Water Companies (Vewin)

Association of Dutch Water Companies (Vewin)
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Description

Vewin is the national association representing Dutch water supply companies. Back in 1952 it was founded; more than 200 water supply companies were active in the Netherlands. Today there are about 10, which is a change that has altered the association's essential task. Vewin focuses primarily on representing the interests of its members in The Hague and Brussels by creating an environment in which members are able to optimally achieve their objectives.

Wupperverband

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Description

Being one of Germany's longest-serving water management corporations, the Wupperverband manages the catchment area of the river Wupper with respect to all water-management tasks since 1930. The catchment area comprises an area of 813 square kilometres with about 2300 kilometres of rivers and streams. More than 900000 inhabitants live in this area.

The Wupperverband is a corporation under public law. Its statutory tasks are sewage treatment and waste disposal, operation of dams to control the water flow in the River Wupper and other rivers, provision of drinking and process water, maintenance and restoration of the rivers and streams. The Wupperverband runs 11 sewage treatment plants, 56 kilometres of sewers, 71 storm-water tanks and sewage pumping stations and 12 dams.

The members of the Wupperverband are the cities and district towns, water supply companies and other companies in the catchment area.

Cooperation Organizations

International Water Association (IWA)

International Water Association (IWA)
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Executive Director
Dr. Ger Bergkamp

President
Glen Daigger

Formed in 1999 following the merger of the International Water Supply Association (IWSA) and the International Water Quality Association (IAWQ), today, IWA is the global reference for water professionals, spanning the continuum between research and practice and covering all facets of the water cycle. As a member driven organization with 10000 individual and over 500 corporate members worldwide, IWA is in a better position than any other organization to help water professionals find innovative, pragmatic and sustainable solutions to challenging global water needs. Through its network of members and experts in research, practice, regulation, consulting and manufacturing, IWA can create expanded knowledge and integrated solutions to meet these needs. Membership to IWA provides water professionals with a forum for collaboration across the boundaries of specialties, professionals and different parts of the world.

IWA seeks to be:

- The premier international network of water professionals drawing members from all disciplines in water science & practice
- An international authority on sustainability in the water sector, promoting innovation and best practice
- A highly valued partner to those organizations dedicated to achieving effective water management
- Provider of global leadership capable of meeting the dual challenges of environmentally sustainable water provision and the development of the plant.

Japan Sewage Works Association (JSWA)

Japan Sewage Works Association
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Japan

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Starting in the latter half of the 1950s, rapid growth of industrial economy led to such social problems as aggravation of the living environment and water pollution in public water bodies. This was the situation when the Sewerage Division of the Japan Water Service Association and the National Sewage Works Development Conference were integrated to form the Japan Sewage Works Association in April 1964. JSWA got permission to establish itself as a public interest corporation in January 1965 and began full-scale activities with public organisations as regular members.

The Association's objectives are to develop sewerage services soundly, while conducting research on sewerage systems, and to preserve a network public water bodies for the improvement of people's lives. As a network organisation of bodies involved in sewage works, JWSA carries out a wide range of activities to promote development of sewage works, and facilitates communication and cooperation between public organisations implementing and planning sewage works on the one hand, and National government, related organisations, enterprises and civic groups on the other.

JSWA has 1,509 organisations implementing or planning sewage works as regular members, 54 as associate members, 1,052 enterprises as supporting members, 435 as individual members and 8 honorary members, for a total of 3,058 organisations and individuals as of January 1, 2012.

United Nations University (UNW-DPC)

UNW-DPC
United Nations University

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The UN-Water Decade Programme on Capacity Development (UNW-DPC) was established in 2007 as a programme of UN-Water, the United Nations inter-agency coordination mechanism on all freshwater issues, including sanitation. UN-Water consists of members from within the UN and outside partners. UNW-DPC strengthens the capacity development activities of UN-Water members and partners and supports them in their efforts to help Member States achieve the MDGs and other goals and commitments related to water and sanitation.

UNW-DPC is funded by the German Federal Government. It is hosted by the United Nations University and located in Bonn, Germany.

Water Environment Federation (WEF)

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President
Sandra Ralston (2013-2014)
Cordell Samuels (2012-2013)

Founded in 1928, the Water Environment Federation® (WEF®) is a not-for-profit technical and educational organization with over 36,000 members worldwide from varied disciplines who work toward WEF's vision to preserve and enhance the global water environment.

WEF and its global network of Member Associations (MAs) help provide water quality professionals with the latest in water quality education, training, and business opportunities. WEF's diverse membership includes scientists, engineers, regulators, academics, plant managers and operators, and other professionals working in the United States and around the world.

WEF's headquarters is in suburban Washington, D.C., with a staff of nearly 100. WEF's office in London also serves as the headquarters for WEF Publishing U.K., Ltd., and is home to WEF's award-winning magazine, *World Water, World Water Reuse and Desalination* and *World Water Stormwater Management.*

IFAT

Hall A3, stand 337/438

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