



# Urban Water Footprint

**Urban Water Footprint:  
A new approach for water  
management in urban areas**

## Information package



**Project: 4CE439P3**

**URBAN\_WFTP: A new approach for water management in urban areas**

*Veneto Productivity Centre Foundation, Vicenza  
Nuremberg Chamber of Commerce and Industry  
November 2014*

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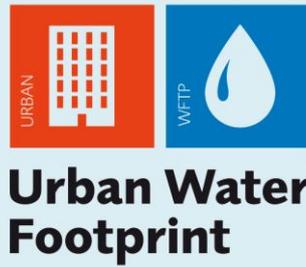
This information/cooperation package is an important base document for sharing project contents information and for supporting collaborative action to do. The document does not tell the story of the project activities but the results, tools and individuals who can provide support for replication of the experiences of the URBAN\_WFP LABs.



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# 1. Introduction



## 1.1. Water resources in the European Union

World population growth, economic development and climate changes have put a lot of stress on the availability of natural resources such as water. In fact this resource, which is fundamental to guarantee life of human beings and ecosystems, is present in limited quantity on earth. As a consequence a growing number of countries are dealing with the issue of water scarcity at the same facing acute water pollution resulting fuelled by unsustainable use of the resource base. Recent estimates of the United Nations, shows that within 2025 over two-third of the world population will live in water scarce regions.

Also in Europe there are evidences of this significant issue; recent estimates show that 10% of the European population and the 20% of the territory are suffering of the consequences of limited water availability. Since 1980, the number of droughts in Europe has increased, and they have become more severe, with negative effects on European economy and society (figure 1).

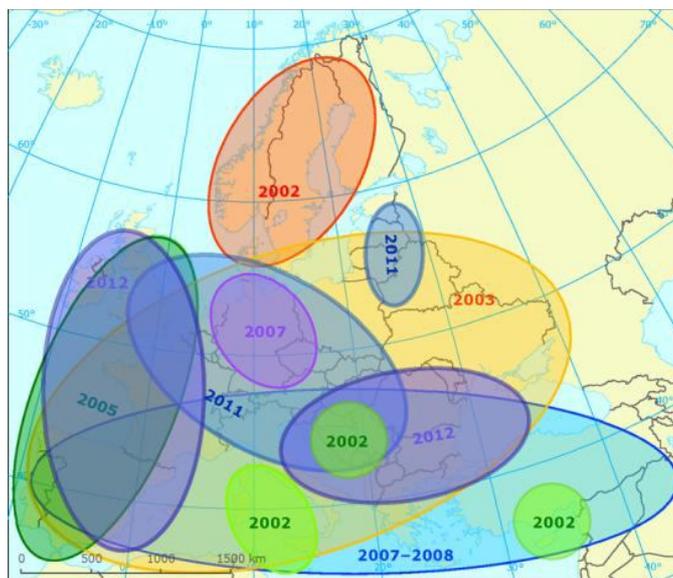


Figure 1 Maps of recent Water droughts in Europe (EU, 2012)

Considering that 75% of European citizens live in cities, a large share of pressure on this precious resource arises from the demand and use of water intensive goods and services. Water management at urban level is therefore recognized to be a priority.

To address the social, economic and environmental issues related to water, the European Union (EU) in 2011 launched a policy document titled “Roadmap to a Resource Efficient

Europe” (EU, 2011) and identified the need to apply innovative scientific approaches to guarantee the correct management of local water resources.

One of the most relevant approaches recognized by the EU to positively contribute to water management is the Water Footprint Assessment.

## 1.2. What is the Water Footprint?

The Water Footprint is a measure of the appropriation of freshwater resources that considers direct water use (use of water within the urban boundaries) and indirect water use (e.g. use of water in the supply chain of the goods and services consumed in the urban area). This water use, called the Water Footprint (WFTP), can be separated into three components based on the sources of water used.:

- the Blue Water Footprint: is the consumption of blue water resources (surface and groundwater withdrawn and not returned to the same water body within a catchment area);
- the Green Water Footprint: quantifies the human consumption of the so-called green water. Green water is the part of the precipitation stored in the soil or which temporarily stays on top of the soil or vegetation. The green WFTP is particularly relevant for agricultural and forestry products (products based on crops or wood). It refers to the total rainwater evapotranspiration (from fields and plantations) plus the water incorporated into the harvested crop or wood;
- the Grey Water Footprint: is the volume of freshwater that is required to assimilate the load of pollutants based on natural background concentrations and existing ambient water quality standards.

There are many examples of the application of this measure to products, processes, organizations, groups of consumers, specific regions and nations.

Through the application of the Water Footprint Assessment following the manual developed by Water Footprint Network (Hoekstra et al. 2011<sup>1</sup>) it is possible to identify strategies and actions to guarantee a sustainable use of water resources.

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<sup>1</sup> Hoekstra, A.Y., Chapagain, A.K., Aldaya, M.M. and Mekonnen, M.M. (2011) The water footprint assessment manual: Setting the global standard, Earthscan, London, UK

## 2. The Urban\_WFTP project



**Urban Water  
Footprint**

## 2.1. Description of the project

This Central Europe project focused on local water management in urban areas in order to improve currently used technologies and to integrate innovative tools for monitoring and managing citizens' water use, water networks and wastewater treatment systems. To achieve these goals the Water Footprint approach represented an opportunity for better water management and use of water.

The Water Footprint approach in urban areas is structured in three levels. The first one describes the water flows in and out of the city and thus allows a global assessment of the city's Water Footprint. On the second level the city is subdivided into areas of similar land use types. This level allows identifying Water Footprint hotspots. The third and most detailed level assesses the Water Footprint starting from the use of water in buildings. This final model supports a better understanding of the influence of local policies on water use and is designed to predict effects of local policy and technology changes.

Additionally the Virtual Water of products which are consumed in the city has been addressed. In so called Urban Water Footprint Labs this Water Footprint approach has been tested in three urban areas in Vicenza (Italy), Innsbruck (Austria) and Wroclaw (Poland). This enables an assessment of the effectiveness of the approach, the comparison of the achieved results and the creation of a Central Europe area which pays special attention to urban water management. The URBAN\_WFTP project anticipated results on how the Water Footprint approach will enable municipalities to better define environmentally friendly policies, plans and strategies.

### **The project activities have contributed to:**

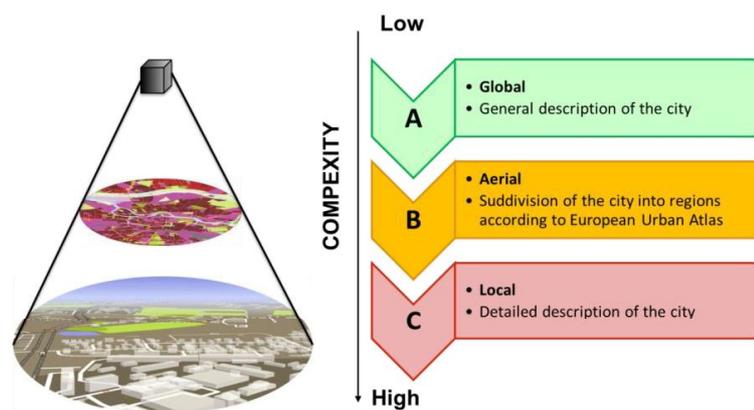
- **support environmentally friendly activities:** the application of the Water Footprint (WFTP) Approach helps Municipalities in the definition of environmentally friendly policies, plans and strategies by quantifying the environmental benefits of the introduction of new technologies and activities; the involvement of water services companies and relevant stakeholders, such as citizens, was foreseen;
- **promote environmentally friendly technologies:** the promotion, diffusion and identification of innovative water saving and water treatment technologies in Urban Areas was one of the key activities of the project; through the WFTP Approach the

most effective technologies and practices, to be applied in Urban Areas, have been identified;

- **economic benefits:** better water management and better water use have positive impacts on water costs;
- **environmental benefits:** better water quality and more efficient water consumption have lower impacts on ecosystem;
- **social benefits:** better quality of water means better quality of life;
- **a European wider common approach on water use:** definition of common strategies on Water Footprint have contributed to promote transnational awareness on urban water management, saving and innovations.

## 2.2. The Water Footprint Models

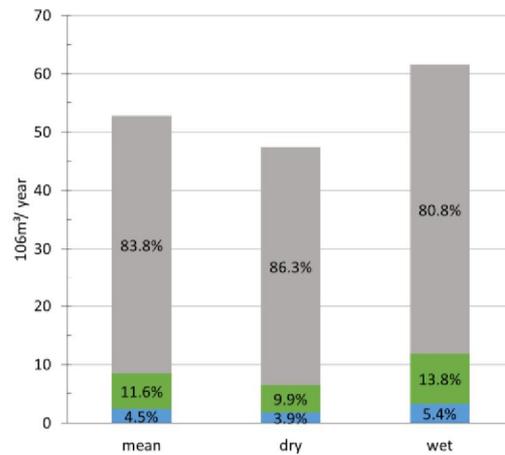
The Urban Water Footprint model enables to calculate in parallel the fluxes of real and virtual water that occur within the city boundaries. The core of Urban WFTP model is the real water model. Three different levels are distinguished in the real water model to reflect the degree of details and the amount of input data that are required (Figure 2). Depending on specific needs only one level needs to be applied for calculating water footprint resulting from real water fluxes.



**Figure 2** Three levels of Urban WFTP model

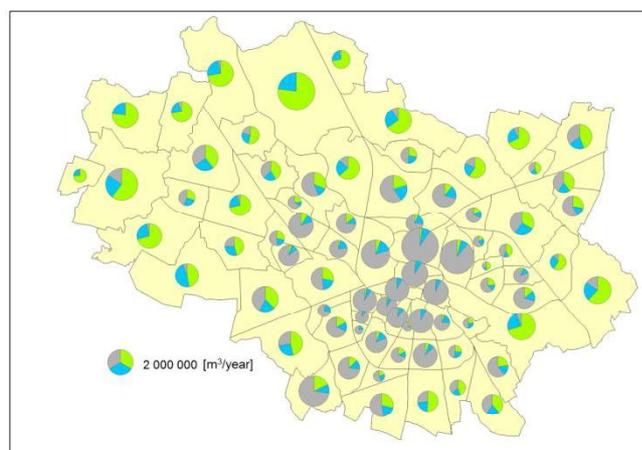
The global model (A) uses a top-down approach and defines the city as a black box. It calculates the water balance of all water fluxes occurring in the city with an input-output approach. Model A allows water footprint accounting of a city and simple assessment of multiple scenarios and measures for improvement/mitigation. This model is addressed to

politicians and decision makers at the municipality level as well as to the water managers. An example of real water footprint assessment for the city of Innsbruck (Austria) resulting from possible change in annual rainfall (+350/-215mm) is presented in Figure 3.



**Figure 3** Innsbruck precipitation change scenarios

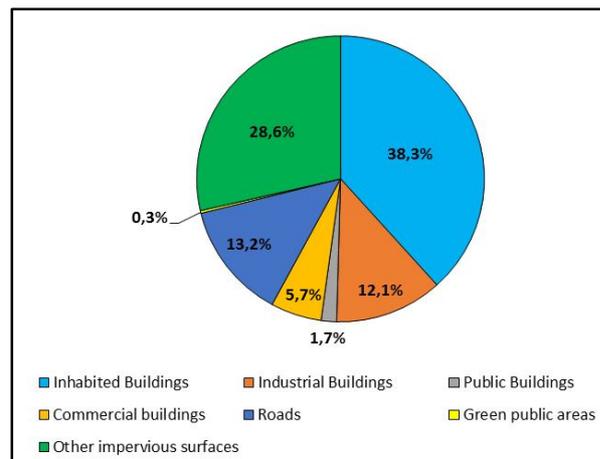
The areal model (B) uses geographical information system (GIS) in order to create maps of water footprint distribution in the city. It uses the same methodology which was applied in model A but water balance calculations are done at the level of administration regions or elementary modules defined based on land use/cover maps. The obtained results are useful for city planners, decision makers and water managers. Their visualisation on the map allows to identify the hot spots where the water footprint is the highest. An example of direct water footprint distribution and the share of blue, green and grey water footprint in administration regions of Wroclaw city (Poland) is presented in Figure 4.



**Figure 4** Direct water footprint distribution in Wroclaw

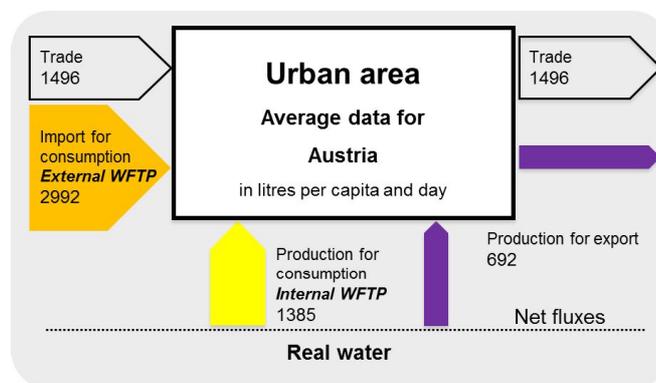
The basis of local model (C) is the analysis of all the structures that generate the water consumptions using the bottom-up approach. Starting from the analysis of a single

representative neighbourhood and its elementary modules (buildings, roads, green areas etc.), the whole city water footprint is estimated adopting a multi-linear modelling approach. It is the most complex model and requires numerous data for the calculations. The results allow for assessment of the citizens behaviour, the technologies used in residential buildings as well as the regulation on fresh-water management solutions for new buildings and discharged water. An example of blue water footprint calculated for different category of buildings in the city of Vicenza (Italy) is presented in Figure 5.



**Figure 5** Blue water footprint from each category of buildings in Vicenza

Because there is lack of statistical data on trade, production and consumption at the city level, the assessment of indirect water footprint (virtual water) in most cases need to be achieved using data available on national level. The virtual water flow model analyses the virtual water fluxes separated in fluxes connected to the consumption of goods (produced external with external water and produced with domestic real water) and to the production (export of goods produced with domestic real water). An example of virtual water flows for Austria is presented in Figure 6.



**Figure 6** Virtual water flows for Austria

# 3. The Urban Water Footprint Labs



**Urban Water  
Footprint**

### 3.1. The Urban Water Footprint Lab of Vicenza

The city of Vicenza (average altitude of 39 m. above sea level) is located in the Venetian plain bordered to the south from the articulate hills complex of “Monti Berici” and to the west by the preAlps, consisting of the mountain system of the “Monti Lessini”. The resident population, at 31/12/2012, was 115,611 inhabitants. The



history of Vicenza has always been linked to the abundance of water, a precious benefit that has encouraged the development of its territory from the point of view of social and economic development.

The town was originally developed on an alluvial hill at the confluence of two major waterways, Retrone and Bacchiglione rivers. Moreover, among the smaller streams, there are the Astichello and Tesina rivers, the Orolo stream and numerous irrigation ditches and canals. Vicenza, and in particular the north, is very rich in ground water and resurgence. Vicenza, known as the "city of Palladio", is a suggestive place of art which won in 1994 the inclusion of the city as a World Heritage Site by UNESCO.

Vicenza is an important industrial and economic centre, characterized by the presence of small and medium-sized companies with strong export vocation. The engineering, textiles and jewellery sectors are especially driving the Vicenza's economy.

The whole area of the city of Vicenza and its surroundings enjoys a great availability of water, mostly drinking water with good/excellent quality. From this area the water is exported to cover the water requirements of other towns and cities of the Veneto regions. The need to preserve over time qualitative and quantitative characteristic of this wealth, makes it necessary to start first by knowledge of the urban water footprint that is, along with agricultural and industrial uses, one of the major sources of resources consumption. The Vicenza Urban Water Footprint Lab (UWFLab) was aiming on the one hand, to enable a system of connections with citizens, including awareness of younger generations between 9 and 18 years, to increase the knowledge/awareness on the importance of protecting water resources; on the other hand it focused on structural character and proposals for the

adoption of innovative technologies that local administrators can translate into regulation rules for the construction of new buildings, or as forecast for territorial planning.

### *3.1.1. Activities of Vicenza Lab*

The lab has worked on two main topics:

- **support the creation of specific knowledge** on how water is managed in the city to support the future update of the urban development plan;
- **create awareness among citizens** on the use of water and on the concept of water footprint in order to improve their consciousness related to water issues and help them to better manage water in their House.

To accomplish these targets the Vicenza UWFLab realized several workshops and meetings with the University of Padova, local water management companies and with citizens. Two questionnaires have been specifically designed and sent to citizens with a high response rate. The first questionnaire was focused on water consumption, the second one was related to the water discharges.

### *3.1.2. Key response and lessons learned in Vicenza*

Through the application of model A and model C to the city of Vicenza the UWFLab has been able to identify the main hotspots related to the Water Footprint in the city and to determine a set of suitable response strategies to improve the sustainability of the Water Footprint. Model A and Model C have been successfully applied and gave the following key-responses:

- The Blue Water Footprint (consumption of surface and ground water from lakes and rivers) and Grey Water Footprint (a measure of pollution of freshwater) are significant and need to be addressed in the water management practices of the cities;
- to improve the Water Footprint specific policies needs to be developed with focus to household water use (direct water use), private building construction regulation, the diffusion of water saving technologies and development of improved water network facilities;
- to reduce the Blue Water Footprint there is a strong need to improve the knowledge about the private water used from wells and develop policies for sustainable

groundwater use. For this it is also necessary to understand the effect of urbanized area on permeability of the surface influencing the recharge of groundwater;

- to reduce the Grey Water Footprint, the most cost effective response strategy is to separate rainwater and wastewater streams, and therefore needs investment in infrastructure development helping this separation;
- it is fundamental to increase the water awareness of the citizens of Vicenza with specific focus to wastewater and water saving technologies.

### 3.1.3. *What's next for Vicenza?*

Vicenza UWFLab has already started to work on the improvement of the sustainability of its Water Footprint. The key next steps identified are:

- **increase the effective runoff:** reduce rainwater infiltration in wastewater streams;
- **improve knowledge on water losses and private uses from wells;**
- **insert Water Footprint indicators in the plans for the sustainable development of the city.**

### 3.1.4. *Contacts*

#### **Municipality of Vicenza, Environment Department**

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Website: [www.comune.vicenza.it](http://www.comune.vicenza.it)

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### 3.2. The Urban Water Footprint Lab of Wrocław

Wrocław, the capital of the Lower Silesia Region, is the city located in direct proximity to the Czech Republic's and Germany's border, at the foot of the Sudety Mountains. Five rivers flow across the city i.e. Odra and its four tributaries which supply the river: Bystrzyca, Ślęza, Oława and Widawa. It is the city with a 1000 years



old history. Numerous islands and over 100 bridges that join them is the reason why so many people call Wrocław „Venice of the East”. Wrocław is also regarded as the green city. It is by far "the greenest" Polish city with parks and green places. Overall, there are 26 major parks, ten forests and three large gardens in Wrocław. Ranked the fourth biggest city of Poland, Wrocław boasts around 650 000 residents living on the area of 293 square kilometres. Today Wrocław is considered one of the most dynamically developing cities in Central Europe. As the third largest educational centre of Poland, with 150 000 students in 30 institutions of higher education, along with numerous research and development centres it is one of the most influential centres of education in of international significance. The contemporary Wrocław is also an important political, economic and cultural centre. For these reasons Wrocław presents itself as a “meeting place” i.e. where innovation happens and people respect and strengthen each other. The assessment of the urban water footprint Wrocław even if did not reveal any significant problems concerning the direct water footprint, however obtaining the results for other cities will allow for comparison and better characterization of the water situation

The initial calculations reveal that the consumption of the virtual water is seven times greater than of the real water, however further studies will concentrate on the real water usage as it is more realistic to reduce. The Wrocław Urban Water Footprint lab was aiming at determining the usage of real water with regards to different types of city areas and buildings in order to recognize some trends, and promote the most efficient. The Wrocław lab consisted of workshops and discussions involving the ‘Waterworks companies’ representatives from the Polish provincial cities and the Lower Silesia region.

The lab addressed the decision-makers, such as water and sewage companies as well as politicians and planners, which have an influence on the investments and policies associated with water consumption, usage and treatment. It is important to raise their awareness about the global water scarcity and to motivate them to choose environmentally friendly and sustainable solutions. Their decisions have an impact on behaviours and choices of large number of people.

### *3.2.1. Activities of Wroclaw Lab*

The lab has worked on two main topics:

- **support the creation of specific** knowledge by acquiring data to assess the Water Footprint through Model A and B;
- **identify strategies to improve water and waste water management in new investments and suggest changes in Local Regulation;**
- **create awareness among citizens** on the use of water and on the concept of water footprint in order to improve their consciousness related to water issues and help them to better manage direct water use in their houses.

To accomplish these targets the Wroclaw UWFLab was involved into two main groups of stakeholders: the decision makers which have impacts on investments and policies, and the citizens of Wroclaw. Several workshops and meetings were held with the University of Wroclaw, local stakeholders companies and citizens. A specific workshop has also been organized with ten other water management companies of adjacent regions that proved their great interest in the approach developed in Wroclaw. The UWFLab performed also an analysis of professional and young citizen water use behaviour.

### *3.2.2. Key response and lesson learned in Wroclaw*

Through the application of models A and model B to the city of Wroclaw the UWFLab has been able to identify the main hotspots related to water of the city and determine a water footprint improvement plan. Model A and Model B have been successfully applied and gave the following key-responses:

- The Blue Water Footprint (consumption of surface and ground water from lakes and rivers) and Grey Water Footprint (a measure of pollution of freshwater) are

significant and need to be addressed in the water management practices of the cities;

- the Blue Water Footprint in the city reduces the water availability within its boundaries, whereas the overbuilt surface increases the flash and intensive floods. Hence, for a proper water management [including flood management], a sound understanding of the relation between flooding and blue WF is necessary. As groundwater flooding has a slightly longer lag time compared to surface water use, a proper hydrological assessment is needed in addition to water footprint assessment in this case. The Grey Water Footprint is particularly relevant where the population density is higher; this result was possible thanks to the specific application of Model B that geo-localize the Water Footprint indicators;
- it is important to spread the diffusion of water saving technologies such as rainwater collection; this practice is also supported by local incentives;
- it is fundamental to increase the water awareness of young people living in the city that resulted to be limited.
- young people and professionals are aware of the costs of water but have little knowledge of the environmental issues related to water management.

### 3.2.3. *What's next for Wroclaw?*

Wroclaw UWFLab has already started to work on the improvement of the sustainability of its water footprint. The key next steps identified are:

- **increase the effective runoff:** limiting impermeable area in the city and working on the separation of separate sewer system;
- **improve knowledge on water losses and private consumption;**
- **linking water footprint to economic investments on new infrastructure and technologies.**

### 3.2.4. *Contacts*

#### **Municipal Water and Sewage Company S.A. in Wroclaw**

Na Grobli 14/16 - 50-421 Wroclaw (Poland)

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Website: [www.mpwik.wroc.pl](http://www.mpwik.wroc.pl)

Contact person: Anna Kolonko / [anna.kolonko@mpwik.wroc.pl](mailto:anna.kolonko@mpwik.wroc.pl)

### 3.3. The Urban Water Footprint Lab of Innsbruck

Innsbruck is situated in the heart of the Alps in Tyrol surrounded by high mountains rising up to 2600m. Covering an area of in total 10.500ha the majority is covered by forests and uncultivated land on the mountains. Because of the relief settlement area is scarce and therefore characterized by a high housing density and few open green



spaces. The 120000 inhabitants predominantly settle along the flat bottom of the Inn valley stretching along this west-east axis. The river Tiroler Inn is heavily dammed in order to protect the city from seasonal flooding. Tourism, in particular winter tourism, plays an important role with several small ski resorts in immediate vicinity to the city.

One of the main issues in Innsbruck is virtual water consumption, which is many times higher than direct water consumption. However, only limited data about this indirect water consumption are available. For that reason the Innsbruck UWFLab focused on virtual water use.

The lab concentrated on the end-consumers of virtual water, which is mostly the private individual. It is particularly important to start at young age to raise awareness about environmental friendly and sustainable water consumption. In this context it is most promising to achieve long-lasting changes in water consumption and behavioural pattern when working with teenagers.

The lab consisted of 4 workshops with school students (age 16-18) with focus on: introducing the Water Footprint approach, presentation and interpretation of results by students, development of measures to improve the WFTP, how to best reduce the Water Footprint and evaluation and review about the measure implemented.

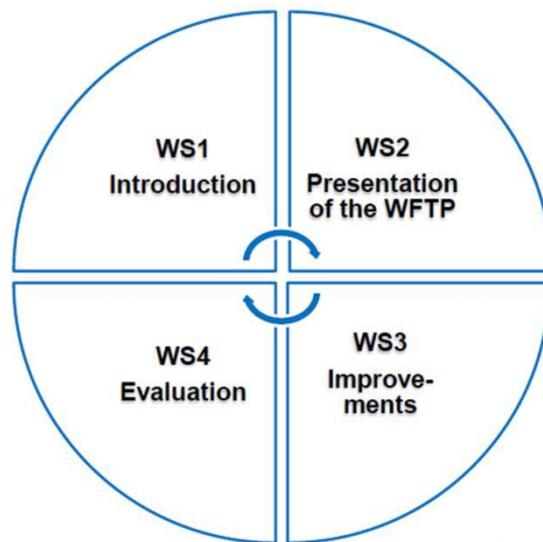
#### 3.3.1. Activities of Innsbruck Lab

The lab has worked on two main topics:

- **assess the specific Water Footprint of Innsbruck citizens and identify current behaviours;**

- **create awareness among citizens** on the use of water and on the concept of Water Footprint in order to improve their consciousness related to water issues and help them to reduce their personal water footprint.

To accomplish these targets the Innsbruck UWFTP-Lab realized several workshops and meetings with the University of Innsbruck and local schools. The Lab has created a specific awareness approach based on four workshops (WS) that have been applied with specific reference to students of Innsbruck (figure 7).



**Figure 7** Awareness approach applied in Innsbruck

### ***3.3.2. Key response and lesson learned in Innsbruck***

Through the application of model A and assessment of the indirect water footprint by accounting the virtual water import into and export from the city of Innsbruck, the UWFLab has been able to identify the main hotspots related to water footprint in the city. Using the water footprint accounting Model A, and the assessment of external WF with the quantification of virtual water imports the UWFLab developed a set of appropriate response strategies to improve the sustainability of the water footprint of the consumers in the city.

The following key lessons are learned:

- major component of the water footprint is related to the water use for food productions;

- reducing food wastes and changing diets can improve the sustainability of the water footprint;
- awareness raising through campaigning the issues, media coverages, and other social media interactions are necessary first steps in sustainable water consumptions;
- grey Water Footprint is the most relevant issue from direct water use in households;
- it is fundamental to increase the water awareness of Innsbruck Citizen.

### ***3.3.3. What's next for Innsbruck?***

Innsbruck UWFTP-Lab has already started to work on the sustainability of its water Footprint. The key next steps identified are:

- **replicate the awareness experience in other schools.**

### ***3.3.4. Contacts***

#### **Alps Ltd**

Grabenweg, 68 - 6020 Innsbruck (Austria)

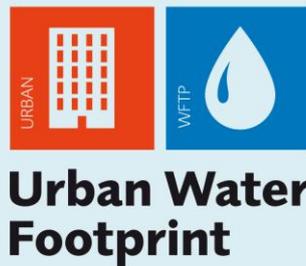
Tel: +43(0)512 392929 39

Fax: +43(0)512 3929 290

Website: [www.alp-s.at](http://www.alp-s.at)

Contact person: Christin Haida / [haida@alps-gmbh.com](mailto:haida@alps-gmbh.com)

## 4. The Network of Experts



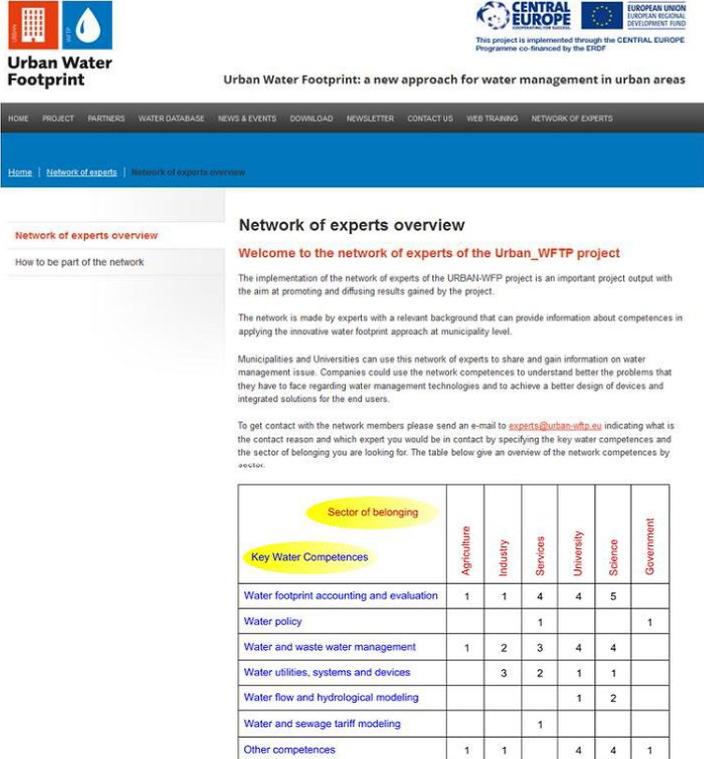
The implementation of the network of experts to the Urban WFTP project is important for the promotion and diffusion of results gained by the project.

The network is made by experts with a strong background that can provide information and competences at high level to all urban sectors interested in applying the innovative water footprint approach at Municipality level.

Municipalities and universities can use this network of expert to share and gain information on water management issue. Companies could use network competences to understand better the problems that they have to face regarding water management technologies and to achieve a better design of devices and integrated solutions for the end users.

Moreover, the network, being web based, allows the diffusion of the Water Footprint approach also in other regions, not directly touched by the project. At the moment, experts are mainly from Italy, Austria, Germany, Poland and Hungary but the network is expected to grow through the enrichment of experts coming from other European Countries.

The instruction on how to be part of the network or how to benefit from the expertise of people who are part of it, are shown in a dedicated section of the project site (Figure 8).



**Urban Water Footprint**

Urban Water Footprint: a new approach for water management in urban areas

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**Network of experts overview**

Welcome to the network of experts of the Urban\_WFTP project

The implementation of the network of experts of the URBAN-WFTP project is an important project output with the aim at promoting and diffusing results gained by the project.

The network is made by experts with a relevant background that can provide information about competences in applying the innovative water footprint approach at municipality level.

Municipalities and Universities can use this network of experts to share and gain information on water management issue. Companies could use the network competences to understand better the problems that they have to face regarding water management technologies and to achieve a better design of devices and integrated solutions for the end users.

To get contact with the network members please send an e-mail to [experts@urban-wftp.eu](mailto:experts@urban-wftp.eu) indicating what is the contact reason and which expert you would be in contact by specifying the key water competences and the sector of belonging you are looking for. The table below give an overview of the network competences by sector.

Key Water Competences	Sector of belonging					
	Agriculture	Industry	Services	University	Science	Government
Water footprint accounting and evaluation	1	1	4	4	5	
Water policy			1			1
Water and waste water management	1	2	3	4	4	
Water utilities, systems and devices		3	2	1	1	
Water flow and hydrological modeling				1	2	
Water and sewage tariff modeling			1			
Other competences	1	1		4	4	1

**Figure 8** Website section of the network of experts ([www.urban-wftp.eu](http://www.urban-wftp.eu))

# 5. The Training Program

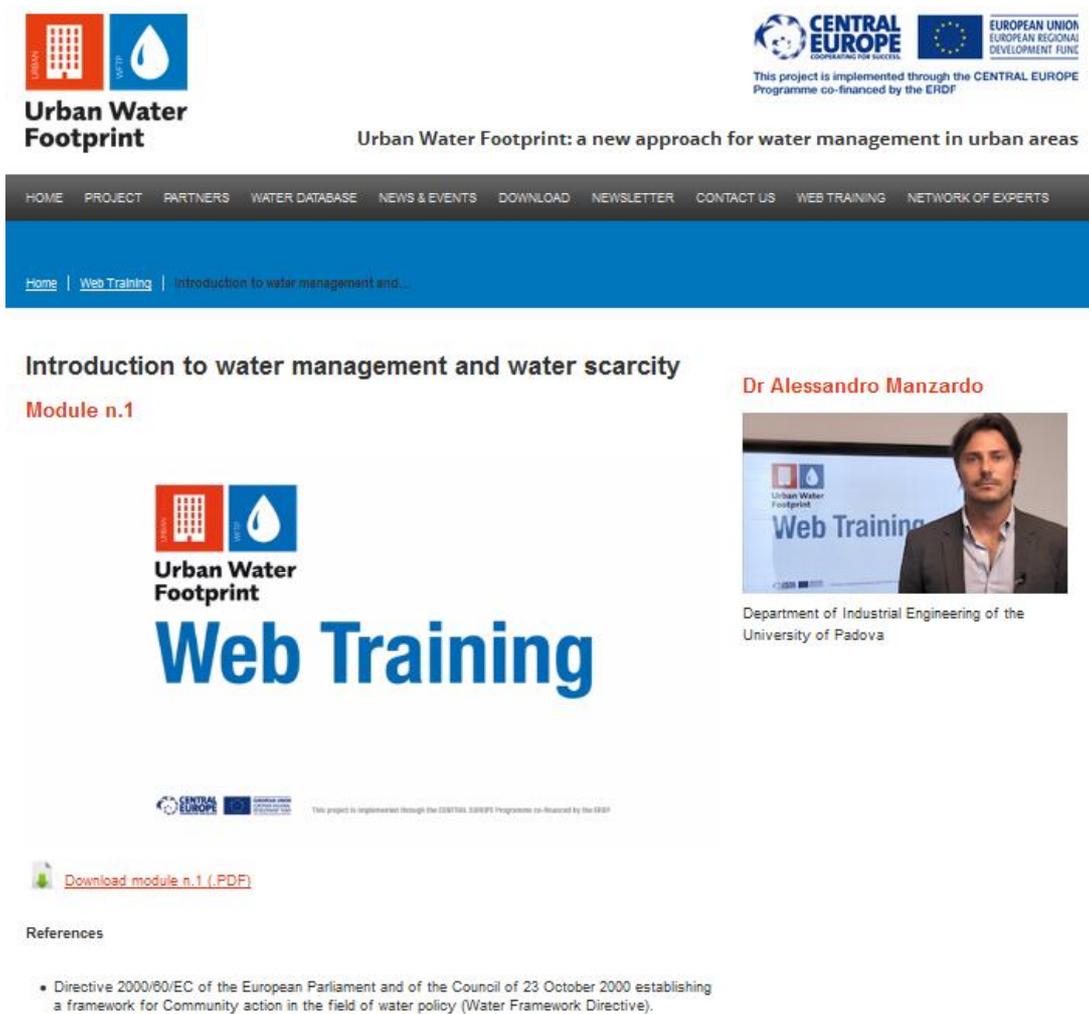


**Urban Water  
Footprint**

## 5.1. Web training

The web training for UWFP-trainers represents an output of the project in the framework of activities for diffusing concepts and methodologies developed through the Urban\_WFTP project. The aim of the web training is to provide UWFP-Trainers with information about the Water Footprint approach, methodologies, indicators and the strategy and activity plans of the three Urban Water Footprint Labs activated during the project. These trainers have had the task to train the representatives/officers of the UWFLabs' regions, mainly from public institutions, during a one-week training.

The web training is composed by the 12 video lessons, with availability of supporting material. Each video lasts around 20 minutes and the total time to dedicate to each module for self-learning is estimated in 1 hour.



The screenshot shows the web interface for the Urban Water Footprint web training. At the top, there is a navigation menu with links: HOME, PROJECT, PARTNERS, WATER DATABASE, NEWS & EVENTS, DOWNLOAD, NEWSLETTER, CONTACT US, WEB TRAINING, and NETWORK OF EXPERTS. Below the menu, the page title is "Introduction to water management and water scarcity" and the module is identified as "Module n.1". The main content area features the Urban Water Footprint logo and the text "Web Training". A video thumbnail shows Dr. Alessandro Manzardo, a man in a suit, speaking in front of a screen displaying the Urban Water Footprint logo and "Web Training". Below the video, it is noted that he is from the Department of Industrial Engineering of the University of Padova. At the bottom, there is a link to "Download module n.1 (.PDF)" and a "References" section listing the Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (Water Framework Directive).

**Figure 9** Web interface of the web training ([www.urban-wftp.eu](http://www.urban-wftp.eu))

The web training is structured as follows:

- 2 modules about the theme of water footprint and its various application, with particular reference to urban areas;
- 3 modules about strategy, activity plans and activities of Vicenza Lab;
- 3 modules about strategy, activity plans and activities of Innsbruck Lab;
- 3 modules about strategy, activity plans and activities of Wroclaw Lab;
- 1 module with useful tips for carrying out a successful training.

At the moment, the web training is available on the website of the Urban\_WFTP project ([www.urban-wftp.eu](http://www.urban-wftp.eu)). The web interface is shown in figure 9. Videos are currently placed in a private area of the website to which only project partners can access. However, they could be made available in the future to those who wish to set up a new UWFLab.

## 5.2. Training weeks

Training activities are important for spreading concepts studied during the project and results obtained and for easing the continuation of activities even after the end of the project. For this reason, periods of training called “Training weeks” have been organized in each UWFLab. The aims of training were to foster the Water Footprint approach, to spread best practices and to diffuse activities carried out. The recipients of the training have been local representatives coming from Municipalities, institutions connected with water management and schools.

The main topics treated during the training have been:

- general basics on the Urban\_WFTP project (objectives, features, partners involved, areas of intervention, targets);
- the Water Footprint concept and its application in urban areas;
- mathematical models developed during the project, indicators, applications and results;
- activities of the three UWFLabs;
- notions about correct water management and water use behaviours;
- new technologies related to water saving and water treatment.

These training periods have been carried out in each UWFLabs through different kinds of training sessions programmed during the selected week by the organizers, with the support

of the selected trainers. Sessions have been structured in a “Training program” by alternating frontal lessons, workshops, guided visits to plants, etc.



**Figure 10** Pictures about training weeks (from left to right Wroclaw, Vicenza, Innsbruck)

Each UWFLab prepared a leaflet in which detailed information about the training program of the training week with time schedules, teachers, locations and topics of the different sessions is available. A tutor was also nominated to help the development of the training week by assisting people who have taken part to the course for information, schedules and materials.

At the end of the one-week training a final “Certificate of attendance” was handed over to each participant that has attended at least the 70% of the total duration of the training sessions.

### **5.3. High level WFTP learning curriculum**

The management of scarce resources such as water has become central to international debates. A growing number of companies around the world are dealing with water use related risks that could affect their business from several points of view: resource accessibility, market image and positioning, compliance with local regulation. In this context emerges the need for a new professional profile called “Resource Manager”, a high skilled person able to integrate the development of strategies to better manage water and other natural resources with business innovation and competitiveness.

This is why a high level course called “Water Scarce Resource Management” has been designed within the Urban\_WFTP project with the contribution of several institutions and important Universities such as The University of Padova (Italy), the University of Wroclaw (Poland) and the University of Innsbruck (Austria). The “Water Scarce Resource Management” will provide participants with knowledge and skills necessary to identify the

role and scope of water resource management, how to identify and measure exposure to loss, as well as develop strategies and methods of handling water related risk.

The course is scheduled in the year 2015 and will be held separately in the areas of the three universities (Padova, Innsbruck, Wroclaw). The organization will be borne by the universities that will activate the course after reaching the minimum number of participants.

In table 1 the program of the course with modules, content and lesson length is shown.

**Table 1 Contents of the high level course “Water Scarce Resource Management”**

<i>Module</i>	<i>Content</i>	<i>Length (h)</i>
<b>Introduction to water scarce resource management</b>	Introduction to relevant environmental issues and scarce resource (Water and Energy)	4
	Introduction on tools to scarce resource management (Life Cycle Thinking, Environmental Management Systems; Footprinting)	4
<b>Design and implementation of scarce resource management Systems</b>	ISO 14001 and EMAS regulations: presentation of requirements and applications to manage water and energy related aspects	8
<b>Assessment and analysis of Water Footprint</b>	Water Footprint of products and organizations: the evolution of water footprint concepts from virtual water to ISO14046	8
	Local Application of Water Footprint approach (URBAN_WFTP approach)	12
<b>Water Footprint reduction strategies and tools</b>	Technologies and management practices	4
<b>Carbon and Energy Footprint</b>	Carbon and Energy footprint of products and organizations	8
<b>European Environmental Footprint</b>	Methodologies and case studies	4
<b>Economic strategies and metrics to manage water scarce resources</b>	Methodologies and case studies	4
<b>Communication</b>	Communication of Environmental Performances	4

# 6. The Urban Water Footprint Database



**Urban Water  
Footprint**

During the Urban Water Footprint Project different methods to improve the Water Footprint within urban areas have been analysed. First of all awareness for the consumption and the value of water needs to be created and experts need to be available to support this. Then modifications in the water supply or water treatment system can be applied. Furthermore changes in processes of companies or in the facilities of households can be made.

Professionals from the water industry and from research institutes with knowledge about new technologies from all project regions are available in the Water Footprint database. They are able to generate innovations in processes and products or can provide helpful analysis of the water consumption.

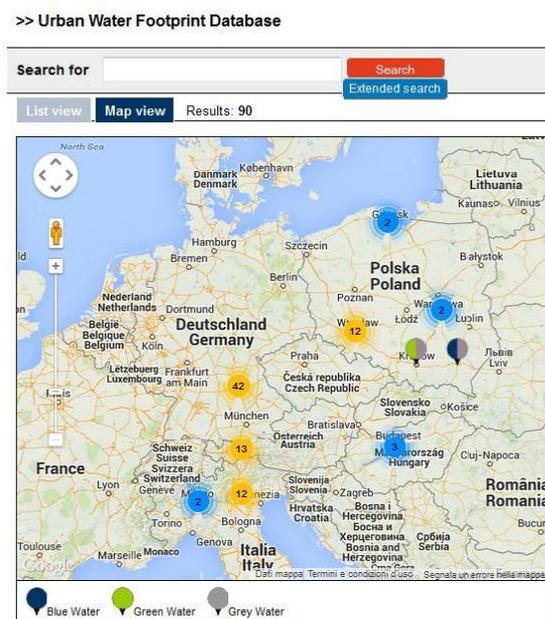


Figure 11 Web interface of the Urban Water Database ([www.urban-wftp.eu](http://www.urban-wftp.eu))

In the urban Water Footprint database 90 actors are involved by the end of the project, these are the main actors from every project region. These actors are consultants for water technologies and efficient water management and manufacturers or traders for water purification and water saving technologies, furthermore companies providing environmental services like contracting, operating, maintenance and service procurement.

In this way the database provides an overview of the interregional market for water technologies and services. Additionally it supports companies, institutions, universities and stakeholders, not only from the project regions, with detailed information about solution providers.

Furthermore this supports interregional contacts and cooperation and helps to support local companies and municipalities. Ultimately interregional innovation potentials are supported and cross-border markets can be developed.

A list of actors for different fields of activity is available at the end of this information package as annex. On the project homepage ([www.urban-wftp.eu](http://www.urban-wftp.eu)) a variety of options for a detailed search and detailed company or institution profile is available (figure 11).

## **Contacts**

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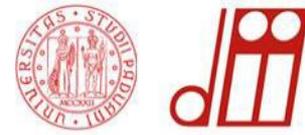
# 7. Project Partners



**Urban Water  
Footprint**

## Department of Industrial Engineering of the University of Padova (Veneto, Italy)

The Department of Industrial Engineering (formerly known as Chemical Processes Engineering) (DII) of the University of Padova is a leading institution in the field of environmental management in Italy. Its research is focused in all aspects of sustainable development and in particular on how environmental issues can support the economic development at local level. Since 2008 the DII has developed a specific branch of research on Water Footprint so that they represent Italy in the ISO Working Group that has developed the new Water Footprint Standards (ISO 14046). The Department is specialized in applied research field so that it has concluded several projects with private companies and local authorities in the field of sustainable water management and application of Water Footprint approach.



### Italian Version

Il Dipartimento di Ingegneria Industriale (precedentemente conosciuto come Ingegneria dei Processi Chimici) (DII) dell'Università di Padova è un'istituzione leader nel campo della gestione ambientale in Italia. Le sue attività di ricerca si concentrano su tutti gli aspetti relativi allo sviluppo sostenibile e in particolare su come queste tematiche possano supportare lo sviluppo economico a livello locale. Fino dal 2008, il DII ha sviluppato un ramo specifico di ricerca sul tema del Water footprint, a tal punto da rappresentare l'Italia ai tavoli di lavoro ISO che hanno portato alla pubblicazione del nuovo Water Footprint Standards (ISO 14046). Il DII è specializzato nel campo della ricerca applicata, ed infatti, ha concluso parecchi progetti legati ad aziende private e autorità locali, relativi alla gestione sostenibile dell'acqua e all'applicazione dell'approccio Water Footprint.

### Contacts

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## Veneto Productivity Center Foundation (Veneto, Italy)

The Veneto Productivity Centre Foundation of Vicenza, active since 1955 is a member of the European Association of National Productivity Centers (EANPS). FCPV main activities are:



- new technology promotion and transfer;
- rationalization and innovation of industrial processes and products according to Kaizen and Triz based approaches;
- advice in intellectual property and patents filing;
- inter-firm exchanges of new technical knowledge through Study Groups, composed by companies' representatives of different sectors: automation and information technology, manufacturing, mechanical technologies, melting technologies, gold processes, environment, energy;
- liaison office among SMEs and University of Padua in Vicenza (special concern in material processes and mechatronics) and University of Trento and Venice;
- enterprise information and assistance to new entrepreneurship;
- education and training.

In addition the "Innovation Area" of FCPV provides Veneto SMEs with services on innovative materials, engineering and industrial design. In "Innovation Area" a special centre named TMD Demotech was opened in 2006 in Schio in Vicenza province (around 1.000 local companies involved). The aim of TMD Demotech is to support enterprises' technological development through technology transfer and innovation, in particular by: "MaTech Point" service for advice on innovative materials and technologies recently introduced into the market and by "Industrial Design learning LAB" for improving creativity. Seminars, meetings, business matching events complete the services offer by TMD Demotech.

### Italian Version

La Fondazione Centro Produttività Veneto (FCPV) di Vicenza, attivo dal 1955 è membro dell' European Association of National Productivity Center (EANPS). Persegue i suoi obiettivi svolgendo attività di:

- promozione e trasferimento tecnologico;

- razionalizzazione ed innovazione dei prodotti e dei processi industriali applicando le metodologie Kaizen e Triz;
- consulenza sulla proprietà intellettuale e il deposito di brevetti;
- scambio di nuove conoscenze tra le imprese attraverso i “Gruppi di Studio”, composti da rappresentanti di aziende appartenenti a diversi settori: automazione e tecnologie dell'informazione, produzione, tecnologie meccaniche, tecnologie fusorie, orafa, ambiente ed energia;
- incontro tra le PMI e l'Università di Padova in Vicenza (con particolare attenzione ai materiali e alla mecatronica) e le Università di Trento e Venezia;
- informazione ed assistenza alle nuove imprese;
- formazione ed informazione.

Inoltre l'“Area Innovazione” del FCPV offre alle PMI del Veneto servizi riguardanti i materiali innovativi, l'engineering e il design industriale. All'interno dell'Area Innovazione è nato un centro speciale di nome TMD Demotech, inaugurato nel 2006 a Schio in provincia di Vicenza (circa 1.000 aziende locali coinvolte). L'obiettivo di TMD Demotech è sostenere lo sviluppo tecnologico delle imprese attraverso il trasferimento tecnologico e l'innovazione, in particolare attraverso i servizi: MaTechPoint per la diffusione di tecnologie e materiali innovativi recentemente introdotti sul mercato e “Industrial Design learning lab” per migliorare la capacità creative. Seminari, riunioni ed eventi di business matching completano l'offerta dei servizi da parte del Centro TMD Demotech.

## **Contacts**

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## Unit for Environmental Engineering, University of Innsbruck (Tirol, Austria)

The Unit of Environmental Engineering (IUT) is part of the biggest Education and Research Institution in western Austria, that is the University Innsbruck. It belongs to the Faculty of Engineering Science. The Unit employs currently a total staff of 24 persons. It is organized in 2 sections, one covering urban water management, and the other waste- and resource management.



Central to the department is the investigation of environmental problems both in research and teaching, with special emphasis on regional (alpine) aspects. The aim is to develop technical and sustainable solutions in order to minimize the impact of society on the environment.

### German Version

Der Arbeitsbereich Umwelttechnik (IUT) des Instituts für Infrastruktur ist Teil der Fakultät für Bauingenieurwissenschaften der größten Forschungs- und Bildungseinrichtung in Westösterreich, der Universität Innsbruck. Am Arbeitsbereich arbeiten derzeit 24 Personen. Intern ist er in 2 Abteilungen gegliedert, der Siedlungswasserwirtschaft und dem Abfall- und Ressourcenmanagement.

Der Arbeitsbereich beschäftigt sich mit umwelttechnischen Fragestellungen (Schutz der Umwelt vor dem Menschen und Schutz des Menschen vor der Umwelt) in Forschung und Lehre. Ein Hauptaugenmerk hierbei liegt auf der Untersuchung regionaler (alpiner) Problemstellungen mit dem Ziel nachhaltige technische Lösungen zu entwickeln.

### Contacts

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## Municipality of Vicenza (Veneto, Italy)

The Municipality of Vicenza is the county seat of the province and has 116,000 inhabitants living in an area of 80.54 Km square.

From the point of view of the administrative organization Vicenza is institutionally a Municipality whose organs are the Mayor, the Municipal Committee, consisting of 10 town Councilors, and the City Council, consisting of 40 Councilors. The main venue is the “Palazzo del Municipio Baston-Trissino”, situated in Corso Palladio. Municipal employees engaged in various areas (registry, land, environment, culture, education, social services, local police, economic development, staff, secretaries, etc..) are about a thousand. Vicenza, which is part of the Veneto Region, it is also the county seat of the province, made up of 121 municipalities.



Operatively, the municipality is structured into departments that provide technical and administrative services targeted to individuals and to businesses. The Environment is in charge of the direct management of the water resources and with the Civil protection Department face the emergencies resulting from natural and man-critical events related to water. The Municipality structure is also composed by a European policies office, which is in charge of general coordination of the ongoing funded projects.

### **Italian version**

Il Comune di Vicenza è il capoluogo della provincia e ha 116.000 abitanti che vivono in un'area di 80,54 chilometri quadrati.

Dal punto di vista dell'organizzazione amministrativa Vicenza è istituzionalmente un Comune i cui organi sono il Sindaco, la Giunta Comunale, composta da 10 Assessori, e il Consiglio Comunale, composto da 40 Consiglieri. La sede principale è il "Palazzo del Municipio Baston-Trissino", collocato in Corso Palladio. I dipendenti comunali impegnati in vari settori (registro, territorio, ambiente, cultura, istruzione, servizi sociali, polizia locale, sviluppo economico, personale, segreteria, ecc.) sono circa un migliaio. Vicenza, che fa parte della Regione Veneto, è capoluogo di provincia, fatta di 121 Comuni.

Operativamente, il comune è strutturato in dipartimenti che forniscono servizi tecnici e amministrativi rivolti alle persone e alle imprese. Il Settore Ambiente è responsabile della gestione diretta delle risorse idriche e con il Dipartimento della Protezione Civile affrontare

le emergenze derivanti da eventi naturali e artificiali critici legati all'acqua. La struttura del Comune dispone anche di un ufficio per le politiche comunitarie, che è responsabile del coordinamento generale dei progetti finanziati in corso.

### **Contacts**

#### **Municipality of Vicenza, Environment Department**

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## alpS Ltd. (Tirol, Austria)

alpS is a research centre for climate change adaptation in mountain regions. It recognizes the pivotal role of social-scientific climate change adaptation research. Through close cooperation with company partners (more than 50), research institutions (approximately 30) and public authorities it is able to analyse the impact of climate change in a multi- and transdisciplinary way.



alpS research...investigates how global climate change affects regional and local human-environment systems. Climate and socio-economic scenarios provide the basis for assessment and evaluation of possible future developments in mountain regions.

alpS development...focuses on innovative, marketable technologies and strategies for a sustainable adaptation to climate change. These include innovations for early warning and monitoring systems for the prevention of natural disasters, tools for modern risk management as well as concepts for adapted land-use, water resource and forestry management.

alpS consult...supports decision makers, institutions and businesses on the basis of its scientific expertise. Risk management for municipalities and businesses or regional energy development strategies serve as two successful examples.

### **German version**

alpS ist ein ausseruniversitäres Forschungszentrum für Klimawandelanpassung in Gebirgsräumen. Forschung, Entwicklung und Beratung an der Schnittstelle von sozio-ökonomischen und umweltnaturwissenschaftlichen Aspekten der Klimawandelanpassung spielt dabei eine besonders wichtige Rolle. Eine multi- und transdisziplinäre Betrachtung von Klimawandelauswirkungen wird durch die enge Kooperation mit Wirtschafts- (über 50) und Wissenschaftspartnern (ca. 30) und Behörden gewährleistet.

alpS forscht...zu Folgen, Chancen und Risiken des globalen Klimawandels für regionale und lokale Mensch-Umwelt Systeme. Klima- und sozioökonomische Szenarien bilden die Grundlage zur Abschätzung und Bewertung zukünftig möglicher Entwicklungen in Gebirgsräumen.

alpS entwickelt...innovative, marktfähige Technologien und Strategien zur nachhaltigen Anpassung an den Klimawandel. Zu diesen zählen unter anderem Innovationen für

Prognose- und Monitoring-Systeme zur Vorbeugung von Naturkatastrophen, Werkzeuge für ein modernes Risikomanagement sowie Konzepte zur angepassten Landnutzung, Wasser- und Forstwirtschaft.

alpS berät...Entscheidungsträger, Institutionen und Unternehmen auf Basis seiner wissenschaftlichen Expertise. Erfolgreiche Beispiele hierfür sind Risikomanagement für Kommunen und Unternehmen sowie regionale Energieentwicklungsplanung.

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## ENEREA Észak-Alföld Regional Energy Agency Nonprofit Llc (Észak-Alföld , Hungary)

ENEREA Észak-Alföld Regional Energy Agency was established in March 2009 as the first (and until now the only one) regional energy agency in Hungary with support from the Intelligent Energy Europe Program. The mission of the agency is to promote energy efficiency, to support the rational usage of energy resources, to foster the usage of new and renewable energy resources and to support energy diversification in the Észak-Alföld Region in order to assist the fulfillment of the aim of Hungarian energy policy.



Our activities extend to the Észak-Alföld Region primarily. During our operation we work with local governments, enterprises, associations, schools as well as other professional and non-professional individuals and communities. Main activities of the Észak-Alföld Regional Energy Agency are: energy planning, organization of conferences, workshops, trainings (e.g. for children or SMEs etc.), exploring good practices, project management, consultancy activity at local governments or for people. We have experience in international projects (SEE, HU-RO, INTERREG IVC, Central Europe).

### **Hungarian version**

Az Észak-Alföldi Regionális Energia Ügynökség 2009 márciusában jött létre az Intelligens Energia Európa Program támogatásával, hazánkban elsőként, és eddig egyetlenként. Az Ügynökség működésének célja alapvetően az új és megújuló energiaforrások felhasználásának növelése, az energiahatékonyság elősegítése, az energiaforrások racionális felhasználásának támogatása, valamint az energiadiverzifikáció megvalósítása az Észak-Alföldi régióban, ezzel elősegítve a hazai energiapolitika célkitűzéseinek megvalósulását. Tevékenységünk során a régió önkormányzataival, vállalatokkal, szakmai egyesületekkel, iskolákkal és a lakossággal dolgozunk együtt.

Főbb tevékenységeink közé tartozik: energiatervezés, konferenciák, workshopok szervezése, oktatás (pl. gyerekek számára, vállalkozások számára stb.), gyűjtjük a jó gyakorlatokat, vállalunk projektmenedzsmentet, tanácsadói tevékenységet önkormányzatok vagy magánemberek számára. Jelentős tapasztalatunk van nemzetközi projekteken (South-East Europe Program, HU-RO, INTERREG IVC, Central Europe).

## **Contacts**

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## Nuremberg Chamber of Commerce and Industry (Mittelfranken, Germany)

The Nuremberg Chamber of Commerce and Industry (CCI) is an entrepreneurial organization with the objective of promoting business. As a body



Industrie- und Handelskammer  
Nürnberg für Mittelfranken

incorporated under public law with a statutory contract, the CCI represents the concerns of the entire industry. As an independent, self-governing body the Chamber of Commerce and Industry provides services to member companies, the region, state and federal government of Bavaria. Services, everybody can benefit from: The promoting of commerce and industry of central Franconia is the major task of the CCI. Being engaged to improve the transportation infrastructure or preparation of adequate commercial sites as well as the acceleration of legal procedures the CCI improves the framework conditions for business of the city of Nuremberg and the region. Other fields of activities are professional praxis oriented training, education and the development of universities. Strong, friendly to small and medium-sized companies and solitary united by its members the Chamber of Commerce and Industry for Central Franconia represents the interest of its members within the region but also across national boundaries.

### **German version**

Die Industrie- und Handelskammer Nürnberg für Mittelfranken (IHK) ist eine unternehmerische Organisation zur Wirtschaftsförderung. Als Körperschaft des öffentlichen Rechts mit gesetzlichem Auftrag vertritt sie ausgleichend die Anliegen der gesamten Wirtschaft. Als unabhängige Selbstverwaltung der Wirtschaft erbringt sie Dienstleistungen für ihre Mitgliedsunternehmen, den Staat und die Region. Leistungen, die allen nützen: Die Wirtschaftsförderung in Mittelfranken ist eines der zentralen Anliegen der IHK. Sie engagiert sich für eine wirtschaftsfreundliche Verkehrsinfrastruktur, für ausreichende Gewerbeflächen und schnelle Genehmigungsverfahren, für den Ausbau von Forschung und Hochschulen, für praxisnahe Aus- und Weiterbildung. Stark, mittelstandsfreundlich, solidarisch durch Pflichtmitgliedschaft: Ein Unternehmen – ob Industrie-, Handels- oder Dienstleistungsbetrieb ist per Gesetz Pflichtmitglied der IHK. Das macht die IHK zu einer starken Solidargemeinschaft, die sich für die Interessen aller Mitglieder einsetzt - in der Region und über die Landesgrenzen hinweg. Gleiches Recht für alle: In der IHK-Vollversammlung - die

über die Leitlinien der IHK-Arbeit sowie den Haushalt entscheidet - spiegelt sich die mittelständische Struktur der Region wider. Dieses „Parlament der Wirtschaft“ wird alle fünf Jahre gewählt, wobei jedes Mitgliedsunternehmen eine Stimme hat. Rund 6 000 Unternehmer und Führungskräfte der mittelfränkischen Betriebe unterstützen die Arbeit der IHK ehrenamtlich, zum Beispiel in Arbeitskreisen, Fach- und Prüfungsausschüssen. Die IHK Nürnberg für Mittelfranken hat gegenwärtig etwa 140.000 Mitglieder und 200 Beschäftigte.

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## Wroclaw University of Environmental and Life Sciences (Dolnoslaskie, Poland)

The Wrocław University of Environmental and Life Sciences:

- 1.600 employees, including 220 Professors
- 10.200 students
- 5 Faculties, 39 Departments and Institutes
- 23 fields of study, 49 specialities, 23 post-graduate courses (areas important for the Polish and European economy)
- over 750 publications annually
- over 240 research projects annually
- over 300 patents
- over 212 000 volumes at the main library



The Wrocław University of Environmental and Life Sciences (WUELS) a well-recognised scientific and educational centre, is the only agricultural university in the south-west region of Poland.

International relations:

- bilateral agreements with 63 universities in different parts of the world,
- WUELS participates in the Socrates/Erasmus (about 100 students go to one of the UE countries and nearly 100 come from UE and Turkey ), CEEPUS, Leonardo da Vinci, COST and 6th and 7th EU Framework Programmes.

About 2.500 students graduate from the university every year. They are specialists highly sought after by the employers, they hold high positions, they have career in the international science, business, finances and politics. They often become leaders in their local communities.

### **Polish version**

Uniwersytet Przyrodniczy We Wrocławiu

- 1.600 pracowników, w tym 220 profesorów
- 10.200 studentów
- wydziałów, 39 katedr i instytutów
- 25 kierunków studiów, 49 specjalności, 23 studia podyplomowe (w obszarach ważnych dla polskiej i europejskiej gospodarki)

- ponad 750 publikacji rocznie
- ponad 240 projektów badawczych rocznie
- ponad 300 patentów
- ponad 212 000 woluminów w Bibliotece Głównej

Uniwersytet Przyrodniczy we Wrocławiu jest jedną z najbardziej rozpoznawalnych uczelni specjalistycznych w kraju i jedyną uczelnią przyrodniczo-rolniczą w południowo-zachodniej Polsce.

Współpraca międzynarodowa:

- umowy dwustronne z 63 uczelniami na całym świecie,
- Uniwersytet Przyrodniczy we Wrocławiu uczestniczy w programie Socrates/Erasmus (około 100 studentów wyjeżdża do krajów UE i około 100 z krajów UE i Turcji przyjeżdża na studia), CEEPUS, Leonardo da Vinci, COST oraz 6. i 7. Programie Ramowym UE.

Co roku mury uczelni opuszcza około 2.500 absolwentów. Są specjalistami poszukiwanymi na rynku pracy, obejmują eksponowane stanowiska, robią karierę w nauce światowej, biznesie, finansach i polityce. Często stają się liderami lokalnych środowisk.

## **Contacts**

### **Wrocław University of Environmental and Life Sciences**

Prof. Dr. Hab. Inż. Stanisław Czaban

C.K. Norwida 25 - 50-375 Wrocław (Poland)

Tel: +48 71320 5513

Fax: +48 71320 5579

Website: [www.up.wroc.pl](http://www.up.wroc.pl)

## Municipal Water and Sewage Company S.A. in Wrocław (Dolnośląskie, Poland)

MPWiK S.A. is one of the biggest water and sewage treatment enterprises in Poland. Apart from that it is one of the oldest in Poland, it was established in 1871.



The Company serves ca. 670 thousand people. It treats water and supplies with water the area of Wrocław, and also neighbouring communities – Oława, St. Katarzyna and Długołęka. MPWiK manages ca. 1900 km of water supply network and ca. 1200 km of sewer network.

The water is purified in two water treatment plants – „Na Grobli” and „Mokry Dwór” – with total efficiency of 123 thousand m<sup>3</sup>/d. Wastewater is treated in modern wastewater treatment plant „Janówek” with capacity of 140 thousand m<sup>3</sup>/d. The Company employs ca. 800 employees.

### Polish version

MPWiK S.A. jest jednym z największych przedsiębiorstw wodociągowo-kanalizacyjnych w Polsce. Obok tego jest jednym z najstarszych w Polsce, jego początki sięgają 1871 r. Spółka obsługuje ok. 670 tys osób. Produkuje i dostarcza wodę na obszarze Wrocławia oraz do gmin przyległych Oława, Św. Katarzyna i Długołęka.

Spółka zarządza ok. 1900 km sieci wodociągowej ok. oraz 1200 km sieci kanalizacyjnej. Woda uzdatniana jest 2 zakładach uzdatniania wody „Na Grobli” oraz „Mokry Dwór” o wydajności 123 tys. m<sup>3</sup>/d. Ścieki oczyszczane są w nowoczesnej oczyszczalni ścieków „Janówek” o przepustowości 140 tys. m<sup>3</sup>/d Spółka zatrudnia ok. 800 pracowników.

### Contacts

#### Municipal Water and Sewage Company S.A. in Wrocław

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Tel: +48 713409967

Website: [www.mpwik.wroc.pl](http://www.mpwik.wroc.pl)

## 8. How and where to find support in case of starting a new Urban Water Footprint Lab?



**Urban Water  
Footprint**

If you are interested in starting an Urban Water Footprint Lab please:

- contact one of the three UWFLabs of Vicenza, Wroclaw and Innsbruck at the addresses you can find in this info package
- request otherwise a contact with an expert of the network assessing the project website ([www.urban-wftp.eu](http://www.urban-wftp.eu)) at the section “Network of expert” and specifying you are looking for an help to start a new lab

# 9. Annex: list of companies in the Water Footprint Database



**Urban Water  
Footprint**

Special thanks to the following companies which have collaborated in the Urban\_WFTP project by joining the Urban Water Footprint Database ([www.urban-wftp.eu](http://www.urban-wftp.eu)).

They provide products or services in the following categories:

- Consultants for Water Technology and Efficient Water Management
- Manufacturers and Traders for Water Purification and Water Saving Technologies
- Environmental Services: Contracting, Operating, Maintenance, Service Procurement

<b>Consultants for Water Technology and Efficient Water Management</b>		
"ABERRO" PAWEL ZIEMLANSKI	Stazia 29A/10 35-051 Rzeszow Poland	Telephone +48 17 7850525 biuro@aberro.pl www.aberro.pl
Abwasserverband Hall i. T. - Fritzens	Innstraße 12 6122 Fritzens Austria	Telephone +43 5224 553280 Telefax +43 5224 55328318 info@abwasserverband.com www.abwasserverband.com
alpS GmbH	Grabenweg 68 6020 Innsbruck Austria	Telephone +43 512 3929290 Telefax +43 512 39292939 info@alps-gmbh.com www.alps-gmbh.com
Amitech Poland Sp. z.o.o.	Nowy Swiat 20a 80-299 Gdansk Poland	Telephone +48 58 3402727 Telefax +48 58 3402723 info@amitech.pl www.amitech.pl
Apura s.r.l.	Piazza Porto 3 25084 Gargnano Italy	Telephone +39 365 642792 Telefax +39 365 1892024 info@apura.it www.apura.it
ARAconsult GmbH	Unterbergerstr. 1 6020 Innsbruck Austria	Telephone +43 660 8114722 Telefax +43 512 274715 office@araconsult.at www.araconsult.at
ARGE Limnologie - angewandte Gewässerökologie GesmbH	Hunoldstraße 14 6020 Innsbruck Austria	Telephone +43 512 364118 Telefax +43 512 36411810 arge@limnologie.at www.limnologie.at
Armar S.C. Marek Szycko, Elżbieta Szycko	ul. Przemkowska 17 54-426 Wroclaw Poland	Telephone +48 71 3542606 biuro@armar.pl www.armar.pl
Atlas Filtri S.r.l.	Vial del Santo 227 35010 Limena Italy	Telephone +39 49 769055 Telefax +39 49 769994 info@atlasfiltri.com www.atlasfiltri.com
db impianti s.a.s	Via G. Verdi, 21/23 24040 Calvenzano Italy	Telephone +39 348 5854446 Telefax +39 363 959118 info@dbimpianti.it www.dbimpianti.it

EKOBUDEX Sp. z.o.o.	Koscierska 7 80-328 Gdansk Poland	Telephone +48 58 5548565/66 Telefax +48 58 5523658 poczta@ekobudex.pl www.ekobudex.pl
ESCAPE s.c. Systemy Uzdatnianie Wody	ul. Krakowska 127 50-428 Wroclaw Poland	Telephone +48 71 3421595 Telefax +48 71 3411160 info@escape.com.pl www.escape.com.pl
FlowChief GmbH	Fronmüllerstr. 120 90763 Fürth Germany	Telephone +49 911 239939-0 Telefax +49 911 239939-99 info@flowchief.de www.flowchief.de
FÖMTERV Civil Engineering Designer Pte Ltd.	Lovohaz Str. 37 1024 Budapest Hungary	Telephone +36 1 3459500 Telefax +36 1 3459550 fomterv@fomterv.hu www.fomterv.hu
Formeco s.r.l.	Vial Cellini 33 35027 Noventa Padovana Italy	Telephone +39 498 084811 Telefax +39 498 084888 export@formeco.it www.formeco.com
Funke Polska Sp. z.o.o.	Długa 5 57-150 Prusy Poland	Telephone +48 71 392701 Telefax +48 71 3927022 info@funkegruppe.de www.funkegruppe.pl
H. P. Gauff Ingenieure GmbH & Co. KG - JBG -	Passauer Straße 7 90480 Nürnberg Germany	Telephone +49 911 9409-0 Telefax +49 911 9409-174 jbgnuernberg@gauff.com www.gauff.com
Geotabo Sp. z.o.o.	Pl. Powstancow Sl. 17A/222 53-329 Wroclaw Poland	Telephone +48 79 556429 Telefax +48 77 4215517 office@geotabo.com www.geotabo.com
Grupatechnika Maciej Fidorowicz	Stefana Szolc-Rogozinskiego 10 53-209 Wroclaw Poland	Telephone +48 53 5553051 kontakt@aquatechnika.com.pl www.aquatechnika.com.pl
Georg-Simon-Ohm-Hochschule Nürnberg, Fakultät Verfahrenstechnik, Prof. Dr. B. Egerer	Wassertorstr. 10 90489 Nürnberg Germany	Telephone +49 911 5880-1473 Telefax +49 911 5880-5475 burkhard.egerer@fh-nuernberg.de www.ohm-hochschule.de
Georg-Simon-Ohm-Hochschule Nürnberg - Fakultät Verfahrenstechnik, Prof. Dr. E. Schicker	Wassertorstraße 10 90489 Nürnberg Germany	Telephone +49 911 5880-1499 Telefax +49 911 5880-5499 edgar.schicker@ohm-hochschule.de www.ohm-hochschule.de
Hanna Nord Est SRL	Viale delle Industrie 10 35010 Villafranca Padovana Italy	Telephone +39 499 070367 Telefax +39 499 070488 informazione@hanna.it www.hanna.it
Hochschule Weihenstephan – Triesdorf - Fakultät Umweltingenieurwesen, Prof. Dr. A. Alf	Steingruberstraße 2 91746 Weidenbach Germany	Telephone +49 9826 654213 Telefax +49 9826 654110 axel.alf@hswt.de www.hswt.de

Hochschule Weihenstephan-Triesdorf, Studiengang Wassertechnologie, Prof. Dr. O. Christ	Steingruberstraße 2 91746 Weidenbach Germany	Telephone +49 9826 654-0 Telefax +49 9826 654-4010 oliver.christ@hswt.de www.hswt.de
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hydro-IT GmbH	Technikerstrasse 13 6020 Innsbruck Austria	Telephone +43 512 50762133 Telefax +43 512 50762199 info@hydro-it.com www.hydro-it.com
igi CONSULT GmbH	Oberdorfstraße 12 91747 Westheim Germany	Telephone +49 9082 73-0 Telefax +49 9082 73-412 info@igi-consult.de www.igi-consult.de
ILF Beratende Ingenieure ZT GmbH	Feldkreuzstraße 3 6063 Rum/ Innsbruck Austria	Telephone +43 512 2412 Telefax +43 512 2412 5900 info@ibk@ilf.com www.ilf.com
Ingenieurbüro Miller	Kieslingstraße 78 90491 Nürnberg Germany	Telephone +49 911 51990-0 Telefax +49 911 51990-80 miller@ibmiller.de www.ibmiller.de
Innsbrucker Kommunalbetriebe Aktiengesellschaft	Salurnerstr. 11 6020 Innsbruck Austria	Telephone +43 512 5020 Telefax +43 512 5025638 info@ikb.at www.ikb.at
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Hannes Jarosch, Ingenieurbüro für Umwelttechnik	Maximilianstr. 2 6020 Innsbruck Austria	Telephone +43 680 3019343 Telefax +43 512 2779922 wasserhan@speed.at
K9 Sp. z.o.o.	Sw. Elzbiety 50-111 Wroclaw Poland	Telephone +48 71 7588201 Telefax +48 71 7588201 biuro@k9.wroclaw.pl www.krainawody.pl
KP Ingenieurgesellschaft für Wasser und Boden mbH	Richard-Stücklen-Straße 2 91710 Gunzenhausen Germany	Telephone +49 9831 8860-0 Telefax +49 9831 8860-29 mail@ibwabo.de www.ibwabo.de
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M. GB. S.r.l.	Via Dei Tretti 43 36014 Santorso Italy	Telephone +39 445 576807 Telefax +39 445 577210 info@mgsrl.com www.mgsrl.com
MPI S.C.	Zakrzewo 62-070 Wroclaw Poland	Telephone +48 61 8530004 Telefax +48 61 8530004 biuro@mpi-systems.pl www.mpi-systems.pl
Nuove Energie s.r.l.	Via delle Meccanica 23-25 36100 Vicenza Italy	Telephone +39 444 963453 Telefax +39 444 960959 info@nuoveenergie.it www.nuoveenergie.com
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Posch und Partners Consultancy Engineers	Sebastian-Kneipp-Weg 17 6020 Innsbruck Austria	Telephone +43 512 282848 Telefax +43 512 282858 office@pap.co.at www.pap.co.at
Pragma Blue S.r.l.	Via Mazzini 24 36040 Brendola Italy	Telephone +39 444 601219 Telefax +39 444 601219 info@pragmablue.com www.pragmablue.com
ProMinent Italiana S.r.l.	Via Dürer 29 39100 Bolzano Italy	Telephone +39 471 920000 Telefax +39 471 920099 info@prominent.it www.prominent.it
R & H Umwelt GmbH	Schnorrstraße 5a 90471 Nürnberg Germany	Telephone +49 911 8688-10 Telefax +49 911 8688-111 info@rh-umwelt.de www.rh-umwelt.de
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Universität Innsbruck, Institut für Infrastruktur, Professur für Siedlungswasserwirtschaft	Technikerstraße 13 6020 Innsbruck Austria	Telephone +43 512 50762121 Telefax +43 512 50762199 umwelttechnik@uibk.ac.at www.uibk.ac.at/umwelttechnik/
Viessmann	Al. Karkonoska 256 53-015 Wroclaw Poland	Telephone +48 78 2756100 Telefax +48 71 3607140 biuro@viessmann.com www.viessmann.com
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Wroclaw University of Environmental and Life Sciences Institute of Environmental Engineering	pl. Grunwaldzki 24 50-363 Wroclaw Poland	Telephone +48 71 3205579 Telefax +48 71 3205579 iis@up.wroc.pl www.iis.ar.wroc.pl

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Amitech Poland Sp. z.o.o.	Nowy Swiat 20a 80-299 Gdansk Poland	Telephone +48 58 3402727 Telefax +48 58 3402723 info@amitech.pl www.amitech.pl
Apura s.r.l.	Piazza Porto 3 25084 Gargnano Italy	Telephone +39 365 642792 Telefax +39 365 1892024 info@apura.it www.apura.it
Armar S.C. Marek Szycko, Elzbieta Szycko	ul. Przemkowska 17 54-426 Wroclaw Poland	Telephone +48 71 3542606 biuro@armar.pl www.armar.pl
Atlas Filtri S.r.l.	Vial del Santo 227 35010 Limena Italy	Telephone +39 49 769055 Telefax +39 49 769994 info@atlasfiltri.com www.atlasfiltri.com
Atotech Deutschland GmbH	Industriestraße 69 90537 Feucht Germany	Telephone +49 9128 725-0 Telefax +49 9128 725-424 atotech.feucht@atotech.com www.atotech.com
C.M. Sterluti S.r.l.	Via Vigazzolo 120 36054 Montebello Vicentino Italy	Telephone +39 444 649544 Telefax +39 444 440292 info@cm-srl.com www.cm-srl.com
db impianti s.a.s	Via G. Verdi, 21/23 24040 Calvenzano Italy	Telephone +39 348 5854446 Telefax +39 363 959118 info@dbimpianti.it www.dbimpianti.it
EKOBUDEX Sp. z.o.o.	Koscierska 7 80-328 Gdansk Poland	Telephone +48 58 5548565/66 Telefax +48 58 5523658 poczta@ekobudex.pl www.ekobudex.pl

ESCAPE s.c. Systemy Uzdatnianie Wody	ul. Krakowska 127 50-428 Wroclaw Poland	Telephone +48 71 3421595 Telefax +48 71 3411160 info@escape.com.pl www.escape.com.pl
FHU IMPET	Kalwaryjska 25 30-504 Krakow Poland	Telephone +48 12 6565951 Telefax +48 12 6564256 biuro@impet.net.pl www.impet.net.pl
FlowChief GmbH	Fronmüllerstr. 120 90763 Fürth Germany	Telephone +49 911 239939-0 Telefax +49 911 239939-99 info@flowchief.de www.flowchief.de
Formeco s.r.l.	Vial Cellini 33 35027 Noventa Padovana Italy	Telephone +39 498 084811 Telefax +39 498 084888 export@formeco.it www.formeco.com
Funke Polska Sp. z.o.o.	Długa 5 57-150 Prusy Poland	Telephone +48 71 392701 Telefax +48 71 3927022 info@funkegruppe.de www.funkegruppe.pl
Geotabo Sp. z.o.o.	Pl. Powstancow Sl. 17A/222 53-329 Wroclaw Poland	Telephone +48 79 556429 Telefax +48 77 4215517 office@geotabo.com www.geotabo.com
Grupatechnika Maciej Fidorowicz	Stefana Szolc-Rogozinskiego 10 53-209 Wroclaw Poland	Telephone +48 53 5553051 kontakt@aquatechnika.com.pl www.aquatechnika.com.pl
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Innsbrucker Kommunalbetriebe Aktiengesellschaft	Salurnerstr. 11 6020 Innsbruck Austria	Telephone +43 512 5020 Telefax +43 512 5025638 info@ikb.at www.ikb.at
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M. GB. S.r.l.	Via Dei Tretti 43 36014 Santorso Italy	Telephone +39 445 576807 Telefax +39 445 577210 info@mgsrl.com www.mgsrl.com
MPI S.C.	Zakrzewo 62-070 Wroclaw Poland	Telephone +48 61 8530004 Telefax +48 61 8530004 biuro@mpi-systems.pl www.mpi-systems.pl
Nuove Energie s.r.l.	Via delle Meccanica 23-25 36100 Vicenza Italy	Telephone +39 444 963453 Telefax +39 444 960959 info@nuoveenergie.it www.nuoveenergie.com
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OSSBERGER GmbH + Co	Otto-Rieder-Straße 7 91781 Weißenburg/Bayern  Germany	Telephone +49 9141 977-0 Telefax +49 9141 977-20 ossberger@ossberger.de www.ossberger.de
Pragma Blue S.r.l.	Via Mazzini 24 36040 Brendola Italy	Telephone +39 444 601219 Telefax +39 444 601219 info@pragmablue.com www.pragmablue.com
ProMinent Italiana S.r.l.	Via Dürer 29 39100 Bolzano Italy	Telephone +39 471 920000 Telefax +39 471 920099 info@prominent.it www.prominent.it
REHAU AG + Co. Eltersdorf	Ytterbium 4 91058 Erlangen Germany	Telephone +49 9131 925-0 Telefax +49 9131 771430 info@rehau.com
RHODIUS GmbH	Treuchtlinger Straße 23 91781 Weißenburg / Bayern  Germany	Telephone +49 9141 919-0 Telefax +49 9141 919-45 rhodius@rhodius.com www.rhodius.com
SAVI Srl	Via Roma 80 46037 Roncoferraro Italy	Telephone +39 376 663724 Telefax +39 367 664256 info@savi.mm.it www.savi.mm.it
Semmelroth Anlagentechnik GmbH & Co. KG	Johann-Höllfritsch-Straße 19 90530 Wendelstein Germany	Telephone +49 9129 4099-0 Telefax +49 9129 4099-12 info@semmelroth.de www.semmelroth.de
SIPOS Aktorik GmbH	Im Erlet 2	Telephone +49 9187 9227-0

	90518 Altdorf Germany	Telefax +49 9187 9227-5111 info@sipos.de www.sipos.de
Speck Pumpen Verkaufsgesellschaft GmbH	Hauptstraße 1-3 91231 Neunkirchen a. Sand Germany	Telephone +49 9123 949-0 Telefax +49 9123 949-201 info@speck-pumps.com www.speck-pumps.com
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### Project partnership

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