SUSTAINABLE WATER TECHNOLOGY SOLUTIONS - THE GERMAN MARKET

LEGISLATIVE FRAMEWORK
A long tradition in environmental technologies aligned to pioneering environmental policy and a supportive legal framework have helped establish Germany as a leading green economy player. The legislative framework drives market demand for advanced water technologies, new management tools, monitoring device, automation and control systems, and new source control instruments. German water protection policy makes legal provision for the maintenance of good quality of water bodies; adequate supply of both drinking and supply water in terms of quality and quantity; and the long-term securing of water for public use. The Federal Water Act (WHG), the Wastewater Charges Act (AbwAG), the Drinking Water Ordinance (TrinkwV), and the Waste Water Ordinance (AbwV), as well as a number of local federal state provisions, create a legal basis for transboundary, sustainable water management. EU directives will also continue to drive innovation and improvements within the sector.

DOMESTIC MARKET AND OPPORTUNITIES
The sustainable water economy is an important and growing sector of the domestic environmental technology and resource efficiency market, generating submarket volume of EUR 46 billion in 2011. According to a Roland Berger study conducted on behalf of the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), the sustainable water economy has the highest productivity growth levels of all of Germany’s green technology lead markets. More than EUR 110 billion has been invested in the domestic sector since 1990, with the private sector being a major recipient of domestic water industry infrastructure spending. Changing requirements in water-intensive industries – including the chemicals and manufacturing sectors – insist on new and more efficient and sustainable solutions being developed and implemented in order to guarantee higher water quality standards. Within Germany, water-saving technologies including metering devices, water distribution and wastewater detectors and sensors, and closed-loop systems for the re-use of water are also in demand.

According to the German Engineering Federation (VDMA), companies in the sector expect continued positive business development as a result of increased domestic and international demand in the first months of the year. Industry turnover expectations for 2012 are estimated at over EUR 2 billion.
DOMESTIC MARKET AND OPPORTUNITIES

A SELECTION OF KEY MARKETS

Listed below are three key market sectors where significant sustainable water technology opportunities exist for water technology and service providers alike.

MANUFACTURING SECTOR

Within Germany, increased demand for energy-saving technologies has created significant market opportunities for providers of sustainable water technologies that optimize processes, reduce wastewater levels, and augment water supply and management.

The manufacturing sector uses around 11 percent of total freshwater abstracted in Europe; around half of which is used for processing and the remainder for cooling purposes. Germany enjoys a 25 percent share of the European water abstraction for manufacturing industry. The sector is supplied from the public water supply system as well as from self-abstraction processes, with the more water-intensive industries usually abstracting from a principal surface water source. The use of more efficient production processes and technologies and the recycling and reusing of water allow the manufacturing sector to significantly reduce water use and significantly cut costs.

MICROPOLLUTANTS (PHARMACEUTICALS AND INTENSIVE AGRICULTURE)

According to the Federal Environment Agency, the contamination of aquatic systems through micropollutants caused by, for example, increased pharmaceutical use and intensive agriculture represents a major environmental challenge. In Germany, several tons of prescription drugs are discharged into the environment as effluence every day, with improper disposal of prescription drugs also accounting for around 100 tons per year.

Diffuse nutrient pollution caused by, among other things, intensive agriculture also saw just 10 percent and 62 percent of German surface water and groundwater bodies respectively achieving “good status” in 2009. In groundwater bodies, high levels of diffuse nitrate pollution were largely responsible for water body status targets not being achieved.

RAINWATER

Rainwater management systems allow water bodies to be protected, water cycle management objectives to be achieved, and costs to be significantly minimized. Infiltration, retention and treatment of stormwater improve groundwater renewal, reduce combined sewer overflow pollutant and nutrition discharge levels, and minimize run-off volumes creating new opportunities for stormwater management providers. Precipitation discharges from separate sewer systems and overflows from mixed systems have led to quality problems in domestic surface waters in the past. Over the past 35 years, the adverse impacts of water management have also been addressed through the construction of more than 45,000 rainwater treatment plants.

To date, almost 24,000 stormwater overflows and reservoir sewers in the mixed system, almost 18,500 stormwater retention facilities in the mixed and separate system, and approximately 3,200 rainwater purification basins in the separate system have been built in Germany according to the BMU. Climate change is pushing this development.
SUSTAINABLE WATER TECHNOLOGIES – GLOBAL MARKET OPPORTUNITIES

Water is an essential resource for human life. The problems of adequate water provision and sanitation in some countries are well documented. Globally agreed objectives - set at the 2002 World Summit on Sustainable Development in Johannesburg - to halve the number of people without access to safe drinking water and sanitation by 2015 are driving demand for water technology solutions.

Climate change, demographic effect and the exploitation of natural resources, are, among other things, directly impacting upon the sustainability of water systems in Europe and are challenging the sustainability of water systems, prompting the need for significant investment. Advanced water technologies, powerful management tools, monitoring, automation and control systems, as well as improved source control instruments are essential to cope with a demanding integrated water management framework.

SUSTAINABLE WATER TECHNOLOGIES – GLOBAL MARKET DRIVERS

Global megatrends including demographic change, climate change, urbanization, globalization, and energy transition to renewable energy sources place new demands on environmental infrastructure. They are also the global market growth drivers for environmental technologies.

GLOBAL GROWTH MARKET

The global environmental technologies and resource efficiency market grew 11.8 percent per annum on average for the period 2007 to 2010, reaching total volume of EUR 1,930 billion in the same year. The leading market sectors of the environmental technology and resource efficiency market generated global volume of EUR 2,044 billion in 2011 – a figure which is set to more than double by 2025. The sustainable water management sector accounts for the second highest overall market volume share, with year-on-year growth of five percent forecast through to 2025. According to Roland Berger Consultants, German-based companies had a 10 percent share of the global sustainable water management market in 2011.

GERMANY: AN EXPORT LEADER

A recent European Commission study confirms Germany’s position as the region’s largest exporter of water treatment technologies. According to the German Engineering Federation (VDMA), German companies exported EUR 914 million in water and waste water technologies in 2012. The largest export market was Russia followed by France. Within the European market (EU-27) export levels remained constant. German water technologies continue to supply domestic and global demand.

ENVIRONMENTAL TECHNOLOGY LEADERSHIP

Germany’s integrated environment and technology policy has allowed the country to establish itself as a major environmental technology and resource-efficiency economy leader. As a forward-looking cross-technology sector, Germany’s environmental technology and resource efficiency branch also enjoys close ties with a number of the country’s classical industry sectors. In international comparison, Germany is second only to the USA in terms of sustainable water technology patents.
GOVERNMENT SUPPORT

Sustainable water technology R&D activities are supported in a number of government programs within the framework of its overarching High-Tech Strategy program of activities to provide innovative technology solutions to global challenges.

R&D FUNDING EXAMPLE: FRAMEWORK PROGRAMME RESEARCH FOR SUSTAINABLE DEVELOPMENT (FONA)
More than EUR 2 billion has been set aside to fund sustainable development R&D activities through to 2015. Adopting five fields of action, the framework program also includes sustainable water management and resource efficiency R&D as a major tool in meeting Germany’s stated objective of sustainable development. More information at: http://www.fona.de

SMALL BUSINESS FUNDING EXAMPLE: CENTRAL SME INNOVATION PROGRAMME
The Central SME Innovation Programme (ZIM) is a nationwide funding program for SMEs and partner research establishments. Research and development cooperation projects, for example, are eligible for project cost support of up to EUR 2 million. ZIM has been open to all industry branches and technological sectors as a source of support for innovation efforts since 2008. The aim of ZIM is to sustainably increase the innovative capacity and competitiveness of SMEs including craft businesses and independent professions and in doing so contribute to their growth and the generation of new jobs. Applications may be submitted continuously through to December 31, 2014. More information at: http://www.zim-bmwi.de/

DEVELOPMENT BANK FUNDING EXAMPLE: KFW URBAN ENERGY REHABILITATION PROGRAM
The KfW “KfW Urban Energy Rehabilitation - Financing program for energy-efficient district supply” provides loans without credit limitation for investment in efficient heat, water and wastewater systems. Loan conditions for investment in efficient heat, water and wastewater systems are as below:

- Effective interest rate from 0.1% per year
- 100% financing
- 10-year fixed interest rate up to 30 years of duration

GERMAN WATER PARTNERSHIP
Supported by five Federal Government Ministries as partners, the German Water Partnership (GWP) pools more than 150 years of water industry experience in an innovative network of private and public entities, research institutions, and water-related associations. The GWP’s main objectives are to establish and position German-based water industry expertise and quality in international water markets.

GERMAN WATER PARTNERSHIP
The GWP provides international clients with individual information and supports communication and initiation of business with its various members and partners.

The BMZ provides support to the GWP in the form of a strategic partnership; exchanging information and identifying joint fields of cooperation and action (e.g. water scarcity in the MENA region).

Since the start of the BMWi Markterschließungsprogramm ("Market Development Program") of the Federal Ministry of Economics and Technology in 2012, around 30 market-entry projects from the environmental technology, water management, waste and closed loop recycling sectors have been carried out.
Research and industry clusters pool the resources of all actors (companies, research institutions, political and non-profit institutions) within the value chain to promote innovation and R&D excellence. A manufacturing or R&D presence in Germany provides an excellent base for serving the European market as well as supplying and meeting domestic and international demand.

*S This list is not intended to be exhaustive (based on “Green tech made in Germany 1.0” – Federal Ministry for the Environment, Nature Conservation and Nuclear Safety)

Source: Roland Berger

A Selection of Sustainable Water Technology Actors

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<td>Ecologic</td>
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<td>Engler-Bunte-Institute</td>
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<td>Cologne University of Applied Sciences - “STEPS”</td>
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<td>University of Applied Sciences Osnabrück</td>
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<td>Helmholtz Centre for Environmental Research (UFZ) - Leipzig</td>
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<td>GKSS Research Center Geesthacht GmbH</td>
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<td>9</td>
<td>Institute for Automation and Communication e.V. Magdeburg</td>
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<td>11</td>
<td>Institute for Regional Development and Planning (IRS)</td>
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<td>38</td>
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<td>39</td>
<td>Kumas (Kompetenzzentrum Umwelt) - Augsburg</td>
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Sustainable Water Research and Industry Clusters

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Source: Roland Berger
ABOUT US

Germany Trade & Invest is the foreign trade and inward investment agency of the Federal Republic of Germany. The organization advises and supports foreign companies planning to expand into the German market and assists German companies seeking to enter foreign markets.

INVESTMENT LOCATION GERMANY

Germany Trade & Invest provides close-to-market information to international companies looking to enter German markets. Our specialist industry teams prepare all of the relevant information essential to business success in Germany. Germany Trade & Invest’s comprehensive range of information services includes:

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- Market entry analyses
- Business and tax law information
- Business and labor law information
- Funding and financing information

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Germany Trade & Invest supports international companies from market entry to business start-up in Germany. Expert project teams advise and assist in the business establishment phase. Germany Trade & Invest’s range of free services includes:

- Legal and tax-related project support
- Funding and financing advisory services
- Site visit organization
- Local partner and network matchmaking
- Public and private partner coordination

All investment-related services are provided entirely free of charge. Our specialist industry teams have hands-on experience in their respective industries and treat all investor enquiries with the utmost confidentiality.

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