



Project Information Sheet

Increased Water Efficiency with Ceramic membrane technology (IWEC)

Programme area:	Efficient use of water resources in Europe
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Partners:	Vitens N.V., the Netherlands EUROSTEEL Agnieszka Geisshirt, Poland
Website:	www.iwec-water-reuse.eu
Benefits (max. 150 characters incl. space):	Reuse of filter backwash water with ceramic membranes reduces water & energy consumption in drinking water treatment and results in significant economic and environmental benefits.
Keywords:	Water, ReUse, Membranes
Sector:	Green Business
Type of solution	Product (System for water reuse with ceramic membranes)
Duration:	01/07/2012 – 01/07/2015
Budget:	€ 1,702,760.00 (EU contribution: 49.75%)
Contract number:	ECO/11/304469

Summary

After years of research done in Europe, the first full scale system for reuse of filter backwash water with ceramic membranes (IWEC) has been built as a demonstration plant at drinking water treatment location Wierden (Vitens) in the Netherlands. The demonstration plant runs satisfactory and validates the systems long term reliability, costs and savings at an operational drinking water treatment plant.

To ensure the quality of the drinking water, an important part of the IWEC project was to monitor the filtered water quality. The outcome of this monitoring was satisfactory from the starting up of the plant and proves the membranes to be an absolute barrier for bacteria (log 7-8 reduction).

Vitens and RWB have prepared an final overview of costs, energy and chemical consumption together with environmental impact for dissemination in Europe to make a more efficient use of water resources possible.

Achieved results

1. The IWEC project has proven the feasibility for reuse of 0,5-1 billion m³ sweet groundwater discharged annually as filter backwash water in the drinking water treatment process.
2. The full scale demonstration plant at drinking water treatment plant Wierden saved 34.000 m³ groundwater during the project. From project end 220.000 m³ groundwater will be saved in Wierden every year. Strict monitoring of microbiological and chemical parameters validated the reliability of the reuse system.
3. The full scale demonstration plant at drinking water treatment plant Wierden will prove in near future a calculated 25% energy reduction compared to current practice and a 80% energy reduction prove compared to state of the art solutions. A reduction in chemical use of 90% has been validated as well as significant lower operational costs compared to state of the art technology. As a result the ecological footprint of the entire drinking water treatment plant is reduced.
4. The project partners investigated the possibilities for IWEC in Europe, especially in the Netherlands, Germany, Sweden, Denmark, Belgium and the UK and decided to focus primarily on the Netherlands, Germany and Denmark. The results will be presented throughout Europe as part of the dissemination plan.

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