

TOTO Jan Maurer, CEO WISY AG, Germany



Rainwater Harvesting

Municipal water supply is not for free, before the water arrives at the tap it has been pumped, mostly from an underground source, filtered and chemically treated





Pumps for public Water supply in Pfungstadt, Germany 4 x 75 kW Depth of Groundwater is 90 Meter, delivery of 12.000 m³ per day





Consumption of electricity for the public domestic supply of water

 Germany :
 1,400,000 MWh
 in
 2012 about 0,6
 kWh per Liter

 United Kingdom:
 2,314,100 MWh
 in
 2007 about 0,78 kWh per Liter

 USA:
 31,910,000 MWh
 in
 2005

Öffentliche Wasserversorgung nach Ländern, Statistisches Bundesamt, 2012 http://oco-carbon.com/wp-content/uploads/2011/10/WaterTable.jpg River Network Report Bevan Griffiths-Sattenspiel, Wendy Wilson Table 4.1



"We estimate that U.S. water-related energy use is at least 521million MWh per year, equivalent to 13% of the nation's electricity consumption."

> River Network Report www.rivernetwork.org by Bevan Griffiths-Sattenspiel and Wendy Wilson



Rainwater Harvesting



Comparison to a standard domestic rainwater Harvesting System: **Energy Consumption** of harvested Rainwater :

0,15 kWh / m³

(650 Watt, 65 Liter/ minute)



Rainwater Harvesting





Possible Substitution of municipal water with Rainwater (German Average)





Rainwater supply needs only 1 quarter of the energy which is needed for municipal water supply

> Consequently the energy emission of Germany with 80 million Inhabitants could be reduced by 560.000 tons of CO₂

What would it mean for your country?



Best practice:

Maracanà Olympia Stadium 2016 in Rio de Janeiro

Cistern size 3.000 m³ Rainwater is used for Irrigation and Sanitation





Best practice:

Coca Cola Femsa Itabirito | Brazil

Reservoir size 1.200 m³ Rainwater is used for Irrigation and Cooling





Best practice:

Mercedes Benz Production Plant Bejing China

Reservoir size : 2000 m³ Rainwater is used for Irrigation and Cooling





"As the world struggles to reduce its carbon emissions in response to global warming, investments in water conservation, efficiency and reuse are among the most cost-effective energy reduction strategies available."

River Network Report 2008 www.rivernetwork.org by Bevan Griffiths-Sattenspiel and Wendy Wilson