

Press Relations Officer: Martin Ittershagen
PR-staff: Anke Döpke, Dieter Leutert,
Fotini Mavromati, Theresa Pfeifer, Martin Stallmann
Address: Postfach 1406, 06813 Dessau-Roßlau
Telephone: +49 340/21 03-2122, -2827, -2250, -2318, -3927, -2507
E-Mail: pressestelle@uba.de
Internet: www.umweltbundesamt.de

Waste water treatment facilities do their bit to protect climate

Cities and municipalities can save a great deal of energy on waste water treatment

The more than 10,000 waste water treatment plants in Germany's cities and municipalities consume a lot of energy, accounting for nearly 20 percent of the power consumption of all public utilities. These facilities consume nearly 4,400 gigawatt hours of electricity per year, which corresponds to the generation capacity of a modern coal power plant, and they emit some 3 million tonnes of the greenhouse gas carbon dioxide (CO₂) annually. This volume of emissions could be reduced by one third without making any major additional investments. What looks especially promising for municipalities seeking to protect the climate is energy-saving aeration of the activation basin and generation of energy from the sludge biogases in cogeneration plants. A new research project headed by the Federal Environment Agency (UBA) demonstrates which measures at waste water treatment facilities can benefit the climate—all without negative impact on purification capacity and operational safety.

The greatest consumption of power in waste water treatment is accounted for by the aeration systems in the activation basin, where biodegradation of pollutants occurs by means of supplying oxygen from the atmosphere. This power consumption could be reduced by an average 30 percent if: firstly, cities were to use electric motors in the highest efficiency class; secondly, better control engineering were in place; and thirdly, pressure gauges and consumption monitors were installed that provide timely indication of malfunctions or system wear and tear.

There is a lot of energy lurking in the sludge itself. Municipalities can extract biogas from it, which can then be used to generate energy in cogeneration plants. Use of biogas is particularly efficient in larger treatment facilities serving populations of more than 10,000. Waste water treatment facility operators are already making partial use of biogas today, but optimal operation can almost double energy yield. Sewage sludge in smaller facilities where the generation of biogas is non-profitable can best be put to use by drying with waste heat from power plants or cement works, or with solar energy, for subsequent use as a substitute

fuel. The digested and dried sludge from larger facilities is another energy-efficient substitute fuel.

The Federal Water Act requires implementation of energy-saving technologies in waste water treatment. There are a number of good opportunities for municipalities to meet these requirements—much to the satisfaction of both the climate and finance authorities.

The key results of the research project *Steigerung der Energieeffizienz kommunaler Kläranlagen (Enhanced energy efficiency in waste water treatment plants)* can be looked up at <http://www.umweltbundesamt.de/wasser-und-gewaesserschutz/abwasser/fg-energie.htm>.

Dessau-Roßlau, 28 January 2008