

**Demonstration and evaluation of energy efficiency and RES concepts for urban quarters
within the EU project PolyCity**

In the face of increase in energy price, rising of energy demand and environmental impacts of limited conventional energy resources, energy efficiency and use of renewable energies are key terms for the world future. On this point, the urban quarter Scharnhäuser Park in Ostfildern, Germany is one of the application area where energy efficient RES-technologies are demonstrated and energy efficient buildings are realised supported by the EU-programme Concerto. An important implementation in the Scharnhäuser Park is the installation of a biomass CHP and the optimised supply of heating energy to the site by using a district heating network. At the beginning of the project, in 2004, biomass combustion had a fraction for 53.3% rate on heat generation for the whole district however in 2007, 83% of heat demand of the area could be covered by biomass and 3327 MWh of electricity have been also produced. On the supply part of the project also more than 37 kWp of new photo-voltaic equipment was set up. On the other hand as prescribed in the development plan, insulation coverings for all buildings had to be built according to a low-energy standard. Special environmental friendly systems as geothermal heat pumps, hydro microturbine and a thermal cooling installation are realised. A statistic analysis of annual consumption values and consumption profiles has been carried out for the area with 4500 inhabitants and 2050 households. In the presentation, the Scharnhäuser Park energy concept from supply to demand site will be described by graphics and tables from detailed measurement results and analysis. With these saving measures and RES technologies important reduction of the energy consumption can be made in the urban quarter.