

## Efficient Energy Use in Cities and Municipalities

Contract for the CONCERTO Premium EU Initiative Awarded to Karlsruhe Institute of Technology and Steinbeis-Europa-Zentrum



*A biomass-based combined heat and power plant is the integral component of the project at Ostfildern. (Photo: Ursula Pietzsch, University of Applied Sciences, Stuttgart)*



*KIT Energy Center: Having future in mind*

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**More than half of the total population lives in cities and produces about 70% of all emissions. According to estimates, 70% of the total population will live in cities in 2050. Use of energy therefore is a big issue for the cities. These challenges are in the focus of a project to be executed by the Steinbeis-Europa-Zentrum (SEZ) and Karlsruhe Institute of Technology (KIT). For the next three years, the partners will be granted funds in the amount of EUR 4.5 million under the EU CONCERTO Premium initiative. It is the defined objective to support cities and municipalities in reaching the ambitious EU 2020 energy and climate goals.**

Sustainable use of energy, use of renewable energies, energy efficiency, and reduction of CO<sub>2</sub> emissions are current challenges faced by cities and municipalities. With its strategy paper "Energy 2020 for a Competitive, Sustainable, and Safe Energy", the European Union has decided to reduce emissions by 20% until 2020. It is aimed at increasing the share of renewable energies to 20% and improving energy efficiency by 20%.

“Our future energy situation will require the use of new technologies, implementation of research results in practice, and support of the state and society in the use of the results. The partnership of Steinbeis and KIT in this EU project will ensure a competent evaluation of energy efficiency and climate protection measures,” says Dr. Karl-Friedrich Ziegahn, Head of the Atmosphere and Climate, Renewable Energies, and Efficient Energy Conversion and Use programs at KIT.

“One of the biggest challenges for the global development of human society in the next years will be the supply of sufficient energy. Apart from the use of regenerative energies, intelligent handling of the energy available and energy-efficient construction and renovation are reasonable strategies. Many research activities, pilot projects, and good examples of applications exist in Europe. The CONCERTO initiative of the European Commission successfully supports such projects,” underlines Professor Norbert Höptner, EU coordinator of the Minister of Economics and Director of the Steinbeis-Europa-Zentrum.

CONCERTO Premium strategically pools the experience gained from projects completed under the CONCERTO initiative and makes it available to potential users at public and private institutions. This know-how shall be considered in future construction and remediation actions. “To enhance the use of this energy-efficient construction know-how, we look for an active dialog with representatives of the cities and municipalities. Good examples are the cities of Ostfildern and Neckarsulm,” continues Höptner.

Monitoring is based on the good practices and project results already obtained under the CONCERTO EU program. Here, 58 municipalities in 23 countries are supported in designing certain city quarters in compliance with energy policy targets. CONCERTO Premiums helps decision-makers establish the necessary framework conditions for reaching the energy policy targets in these municipalities.

The CONCERTO Premium consortium consists of experts of SEZ and KIT in the fields of research, implementation, knowledge transfer, communication, and visualization. SEZ will coordinate CONCERTO Premium and be responsible for the dissemination of the project results.

**Example Ostfildern (EU Project POLYCITY):**

The project area is the Scharnhäuser Park in Ostfildern, a former military area. On an area of about 150 hectares, a high-quality family-friendly residence and working area is being established. The Scharnhäuser Park is conceived as an urban development project of ecological model character with low-energy standards being implemented for all new buildings. The electricity and heat needed are produced by a biomass-based combined heat and power plant in a cogeneration scheme. The biomass mainly is waste wood. Using the residual heat, the power plant also supplies cold for business enterprises. The heat arising and unused in the summer is used by thermal cooling techniques for the air conditioning of office buildings. All buildings have been provided with a high-quality insulation in order to prevent unnecessary heat losses in winter. Use of solar energy is envisaged.

Further information:

[http://six6.region-stuttgart.de/sixcms/media.php/773/Gewerbeflaechen\\_Ostfildern.pdf](http://six6.region-stuttgart.de/sixcms/media.php/773/Gewerbeflaechen_Ostfildern.pdf)

**Example Neckarsulm (EU Project Energy in Minds):**

To enhance the use of renewable energies, another 2500 square meters of collectors shall be installed in addition to the already existing 14,000 square meters. Among the measures taken are new photovoltaic systems with a total power of 500 kW/peak, an extension of the grid in the industry zone "Trendpark Süd" for a more efficient use of biomass, and the setup of an infrastructure for wood pellets to replace old heating systems in about 20 households. In addition, pilot projects are planned. Among them is a solar-based drying plant for sewage sludge and a field test with Stirling engines driven by wood pellets. An energy check will be performed for about 10 to 20% of all buildings in order to illustrate the existing saving potentials. About 200 houses and apartments in the city center and at Viktorshöhe are planned to be renovated to improve energy characteristics.

Further information:

[www.neckarsulm.de/main/unser-neckarsulm/solarstadt-neckarsulm.html](http://www.neckarsulm.de/main/unser-neckarsulm/solarstadt-neckarsulm.html)

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**Karlsruhe Institute of Technology (KIT) is one of Europe's leading energy research establishments. The KIT Energy Center pools fundamental research with applied research into all relevant energy sources for industry, households, services, and mobility. Holistic assessment of the energy cycle also covers conversion processes and energy efficiency. The KIT Energy Center links excellent competences in engineering and science with know-how in economics, the humanities, and social science as well as law. The activities of the KIT Energy Center are organized in seven topics: Energy conversion, renewable energies, energy storage and distribution, efficient energy use, fusion technology, nuclear power and safety, and energy systems analysis.**

**Karlsruhe Institute of Technology (KIT) is a public corporation and state institution of Baden-Wuerttemberg, Germany. It fulfills the mission of a university and the mission of a national research center of the Helmholtz Association. KIT focuses on a knowledge triangle that links the tasks of research, teaching, and innovation.**

This press release is available on the internet at [www.kit.edu](http://www.kit.edu).