Demonstration of an energy-efficient and socially fair neighborhood development based on electrical-thermal interconnection systems

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The project "Demonstration of an energy-efficient and socially fair neighborhood development based on electrical-thermal interconnection systems" is a project initiated by the city of Zwickau in cooperation with scientific and economic partners. The main goal is to develop technologies and methods for the local energy transition, especially the local heat transition and to demonstrate this as a real laboratory in a suitable district in Zwickau. The conception and implementation of electrical-thermal interconnection systems is the basis for an energetic development in a district for the realization of a zero-emission-city. This requires highly efficient storage technologies and the combination of electrical and thermal overall concepts. This makes it possible to increase the share of renewable energy sources such as photovoltaics and in particular solar and geothermal energy in residential districts. Due to the demographic structure found in Zwickau, the city is already closer to the future - whether it is the population structure or the comparatively high technical start level due to the numerous projects carried out in this environment. Within the framework of this project, municipal projects such as climate protection concepts as well as scientific projects of the University of Applied Sciences Zwickau and their partners can contribute to an energy-efficient and social development. Social welfare plays a special role in priority regions such as Zwickau. In this inter- and transdisciplinary project, it is indispensable to pursue a user-oriented and centered technology development. The aim is to secure the affordability of housing by means of new technologies and economically viable concepts as well as social science methods. It is our goal to secure affordable and sustainable habitation by creating new technologies, commercially viable concepts and methods derived from social science.

Biography

Sebastian Junghans has studied business informatics and completed it in 2012. He, then began his scientific work at the University of Applied Sciences at Zwickau. He has started in Product Lifecycle Management (PLM). The center of this research work was the integration of design and work planning, the use of natural-analogue algorithms for automated order processing as well as shortening the "time-to-market". The use of techno-economic systems to increase energy efficiency in interaction with smart metering, smart home and smart grid forms was the next research topic. He is currently working on interconnection in the residential district and Big Data.

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