



5<sup>th</sup>  
INTERNATIONAL WORKSHOP  
ADVANCES IN CLEANER PRODUCTION

“CLEANER PRODUCTION TOWARDS A SUSTAINABLE TRANSITION”

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**Resource efficient and clean urban technologies**

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Cities will be the power plants of the future. Over 50% of the world's population live in cities, about 65% of the resources are used there and 70% of the emissions are caused by them. And more and more people move to cities for employment and livelihood. It is obvious therefore that the transition to sustainable energy systems has to start here.

So far cities have been getting energy from outside. All power plants and refineries are situated far away from the largest consumer. This system is both expensive and volatile. While discussing the possibilities of energy transition in urban areas, reduction in energy demand has to be considered first. It is not mainly technologies that have to be developed, but overwhelmingly the systems that need to be considered. These systems require short distances to minimize energy transportation. Above all, houses have to be energy effective (with a minimum of heating and cooling).

Next, renewable energies have to be harvested on site. Solar systems on roofs and facades go hand in hand with integrated small-scale wind turbines. The development of smart energy grids for power and heat/cold including storage facilities will be one of the main system-related challenges.