

## Solar Thermal Micro-turbine

### Summary

Development of a technology for a decentralized electric current generation from solarthermic energy in a power range up to 20 kW. For this, compressed wind in an absorber tube becomes heated through solar energy. The absorber tube is located in the focal point of a parabolic trough, as it is known among the solar thermal big energies. After the compressed air in the absorber is heated, is it released in a micro-turbine in order to count with electric current. At the same time, a compressor on top of the turbine produces new compressed air, which is heated in the absorber. Because of the fact that the core components of the Solar Thermal Micro-turbine (turbine, generator and heat exchanger) are installed on the floor, it is possible to integrate a heavy heat accumulator in order to produce current at night too.

### Development stage, time to market

State of development: Basic research and concept development are finished. Development of the gas turbine components is being developed.  
Time to market: in the next 12 months

### Market potential

Market size and characteristics  
Markets in countries with public grants for regenerative energies (e.g. Germany, Spain, Switzerland)  
Potential markets in areas where a poor developed infrastructure without electricity network are present, and where there is sufficient sunlight. (e.g. arabic, african and sudamerican regions).  
Approx.. 2 bn people have no access to public electricity networks, thereof approx. 30% are able to procure an electricity generator equipment. Out of these, 0,7 bn people, there are a 1% resdy to buy a solar turbine  
market volume of 210 bn Euro by an equipment price of 30.000 Euro.

### IP

Patent application: Bauer, M.; Mehringer, F.; Müller, E.: Solar thermal operated microturbine, Az. 102010023843.0, patent application, German Patent and Trademark Office 2010

### Partnering sought

We have some potential customers in Spain, Germany, Italy

### Contact Details

Tobias Meyhöfer  
Tobias.meyhoefer@wirtschaft.tu-chemnitz.de