

Monitoring Results of Installed Solar Thermal Systems in the Southern African Region

Rudolf Moschik

Monika Spörk-Dür

AEE-Institute for Sustainable Technologies (AEE INTEC)

Feldgasse 19, 8200, Gleisdorf, Austria

Phone: +43 3112 5886

E-mail: r.moschik@ae.or.at

Website: www.aee-intec.at

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The SADC region is blessed with solar radiation between 1,800–2,400 kWh/m². Nevertheless only 0.3% of the worldwide solar thermal capacity is installed in the Sub Saharan African Countries. Therefore the main goal of the Project Southern African Solar Thermal Training and Demonstration Initiative “SOLTRAIN”, funded by the Austrian Development Agency (ADA) and the OPEC Fund for International Development (OFID), is to contribute to a changeover from a mainly fossil based energy supply to a sustainable energy system based on renewable energy. Within the SOLTRAIN project, companies, who took part in the several training courses, installed more than 300 Solar thermal systems in the past 9 years. Out of these systems different types were selected for monitoring in order to obtain a representative variance of the different system concepts and designs. The aim was to get information on the performance of the improved systems and to use this gained data for further evaluations. The recorded data of all systems were downloaded and analysed continuously and documented by the responsible project partners. With the help of the analysis of the data, the functionality and the possibilities for additional system improvements were figured out. The analyses and evaluation of the recorded data was done at least once a month. For all systems, a monthly monitoring report was prepared.

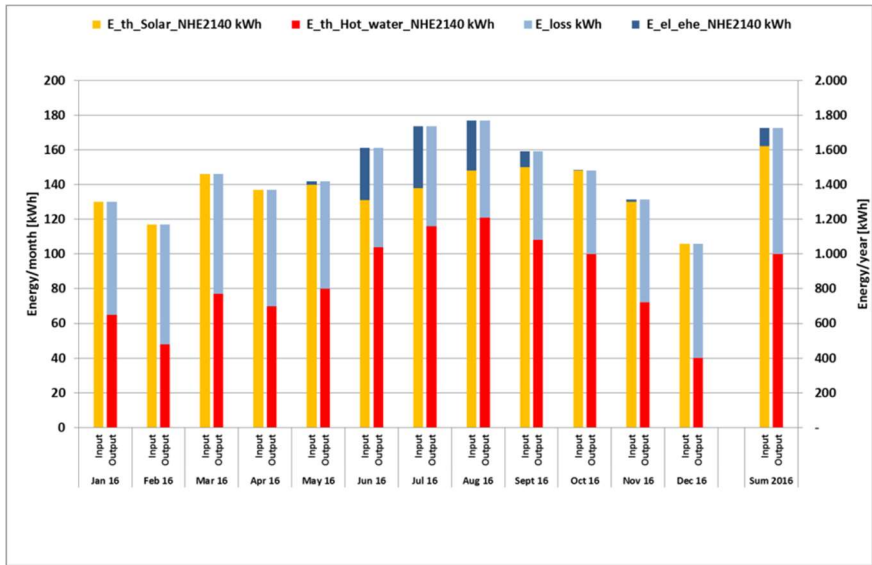


Figure 1: monthly energy balance of a monitored demonstration system

Based on the recorded solar thermal yields, the avoided CO2 emissions and electricity savings were calculated after the 12 months monitoring period. All this information has also been used in training courses offered during the project and gave a lot of practical information, key factors and knowledge about the performance of these systems.