



EUROPEAN SOLAR PRIZE 2015

Solar excavator, Affentranger Bau AG

Transport and mobility

World's first 16-tons-solar excavator with electric motor and an energy supply from a PV-system on the operational building

In cooperation with the Swiss Federal Institute of Technology, the Buchs Interstate Technical University NTB and the construction machine manufacturer Huppenkothen, the innovative building contractor Markus Affentranger set the way for the world's first 16-t solar excavator with an electric motor. The SUNCAR electric excavator is low-noise, emission-free and very powerful. With a motor-power of 75-167 kW it does not need to avoid the comparison with its diesel-powered colleagues of barely 70 kW.

Instead of 150,000 kWh/a, the modified Takeuchi excavator does only consume 30,000 kWh/a; this is hardly 1% of the total in-house solar production of 3.2 GWh/a of Markus Affentranger and Markus Bösiger. The battery has a capacity of 190 kWh, which is enough to use the excavator for nine hours a day. Compared to a diesel-powered excavator, the solar excavator's emissions are reduced by 40 t annually, which leads to a reduction of fuel costs of CHF 21,000 per year.

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