TRM PILING SYSTEMS FACTSHEET

Concentrated Solar Projects (CSP)

KaXu Solar One, South Africa

+ 52,800 piles - for a 100 MW power plant
+ Pile type TRM 118
+ Millimetre-precise positioning of the ductile driven piles
+ Designed for wind speeds up to 140 km/h
+ Construction time: 10 months
+ Implementation in 2013

Fast. Simple. Safe.
www.trm.at

Factsheet **CSP**

The Initial Situation

South Africa decided to become more active in the field of **solar energy** in order to make its energy supply less dependent on fossil fuels, especially coal. Coal reserves are rather limited in South Africa. In the Northern Cape region, on the border to Namibia, the sun shines 320 days a year.

With the KaXu Solar One project, the country is making a start on tomorrow‘s energy generation. The 100 MW power plant covers a construction area of 3.5 x 1.5 km. Since the implementation of this project requires the **highest precision**, the **TRM Piling System** was chosen.

Preparation for the installation of the parabolic reflectors

Solar thermal power plants:
A receiver tube located in the linear focus of the mirrors captures the solar radiation and thus heats the liquid stored in the evaporator. The generated steam drives the turbines and produces clean energy. The more precisely the parabolic troughs are positioned towards the sun‘s rays, the more efficient the energy production.

Factsheet **CSP**

Deep foundation

The correct construction of the foundations for the parabolic trough power plants is **millimetre work**. The plant must be precisely aligned horizontally in the north-south axis. Accuracies of +/- 3 millimetres in position and +/- 20 millimetres in height must be guaranteed. The **TRM ductile iron pile** is driven with an **accuracy of +/- 40 millimetres**. The pile is moved in height and position with the help of a total station with the guaranteed accuracy. Although the parabolic mirrors have a low dead load, they must still hold their position at wind speeds up to 140 km/h in order to be able to produce energy even in difficult wind conditions. Only when the wind speed exceeds 140 km/h do the huge surfaces move into a secured position. With the TRM Piling System, the **tolerances can be kept as low as possible**, which considerably **shortens the construction times of CSP projects** and also ensures **efficient energy production** after the power plant is commissioned.

Driving process

Positioning the bolts

Bolts with substructure

Columns for the parabolic reflector

Do you have any questions? Our experts will be happy to advise you.