

# Leica Geosystems **TruStory** DISTO™ D810 touch contribution to renewable energy in Tanzania



## ■ Company

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## ■ Challenge

Taking precise measurements under unfavourable environment conditions such as bright sunlight, uneven ground and inaccessible areas.

## ■ Location

Ibaba, Tanzania



## Solution

- Effortless targeting and highly precise measurements achieved with the integrated camera and Pointfinder of Leica DISTO D810™ touch.



Tobias Klaus, Chairman afrisol ar e.V.

**Out of Tanzania's 41 million inhabitants, only 12% of its urban and 2% of its rural population have a steady source of electricity. Added to this, Tanzania is heavily dependent on hydro-power, which means in times of drought, energy is not always available. Most of the country's infrastructure has no reliable source of power.**

The village of Ibaba, located in the Mbeya Region of Tanzania is no exception. The 1700 inhabitants of this village are in great need of a reliable power supply, predominantly to modernise its local hospital and primary school, but also to ease the day-to-day lives of the Ibaba households. Till now, the village was forced to get by without any electricity and was dependent on natural day light, using candles and torches when it became dark. Recently, the non-governmental organisation, afrisol ar e.V., together with the Moravian Mission Society in Germany and other private and public sector associates, decided to bring about indispensable change to the village. Their goal was to establish a sufficient electricity supply to Ibaba's hospital and one of their five schools based on photovoltaics (PV).

Initial research and planning for the project began in late 2013 and was led by a German project team, supported by volunteers of Ibaba. After the planning was completed, the actual construction began. This is where the Leica DISTO™ D810 touch laser distance meter became exceptionally useful.

The built-in camera of the DISTO™ D810 touch was an enormous help to collect accurate measurements of the PV field and to measure distances when setting up electricity poles. The chore of using traditional measuring tape or other laser measures to get correct measurements was very difficult to carry out because of the extremely bright natural light of the African sun combined with the uneven ground planted with maize and other crops. But by using the built-in camera of DISTO™ D810 touch, the target could be easily moved on the crosshair, eliminating this problem.

The DISTO™ D810 touch enables taking precise measurements of remote, hard-to-reach areas up to 200 meters. Without the DISTO™, workers would normally have had to walk through vegetable fields and destroy some of the valuable crops in order to calculate the needed



#### ■ Product highlights

- Accuracy  $\pm 1\text{mm}$
- Touchscreen
- Pointfinder with 4x zoom
- Camera function with USB download

cable lengths and to find the optimal path. Luckily this is no longer necessary.

Ultimately one of the major benefits of using DISTO™ D810 touch for this project was that carrying out the above-mentioned tasks in bright light was eliminated. The laser beam was easily detectable and work could be carried out throughout the day.

"Especially under the bright sunlight conditions of Tanzania, the camera feature of the DISTO™ D810 touch proved extremely useful. Previously, I had been trying to use a product from a competitor, which didn't work because the laser was hardly visible. With DISTO D810 touch, it worked like a charm," says Tobias Klaus (Chairman of afrisolar e.V.).

With the help of DISTO™ D810 touch, the project team constructed the solar foundations, a wooden

support structure on the school ground for the solar modules, and finally set up the 20 kW solar plant, from where the electricity lines extended to the hospital over a distance of about 250 metres. Local electricians volunteered their time for the electrical installations in the hospital and school.

This long-planned project was indeed rewarding when the PV system was finally up and running in late

February, 2015. In fact, much interest was shown by Tanzanian local and national politicians; the Rural Energy Agency of the country as well as GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit), who are following the project closely. This clearly indicates the country's interest to proceed with the program and expand renewable electricity network to other villages as well.

