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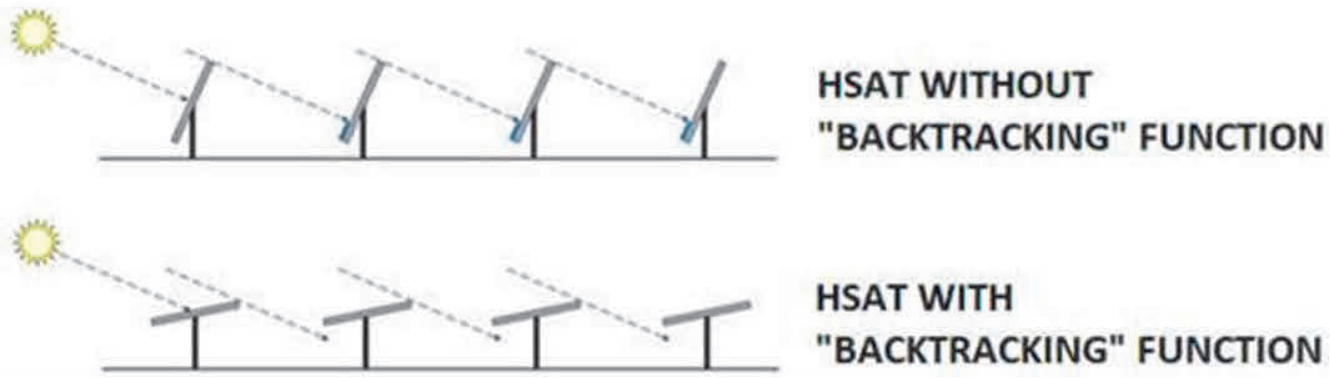
Solar Brain

The performance of a photovoltaic installation is often affected by shading that can arise due to various factors, such as for example trees, buildings or in most instances, neighbor trackers. Backtracking technology has been developed to eliminate these problems and to contribute to the improvement of the performance of the entire PV Installation. How does this technology work? The explanation is simple!

Trackers shadow each other in the early morning or late afternoon and these intervals vary between different locations. Backtracking technology uses data such as location coordinates and the characteristics of the photovoltaic installation, such as dimensions and distances between successive rows of trackers and at a specific time points the trackers turn to the appropriate inclination so that they avoid random shadows and achieve better performance.



DegerHellas designs and manufactures the SolarBrain for single axis trackers. This device is connected to the PV installation and uses a sophisticated Backtracking algorithm to determine the optimal slope of each tracker. This means that trackers cast no shadow on their neighbors (west or east). The combination of MLD and Backtracking technology will lead to maximum efficiency throughout the day for your photovoltaic installation.

In addition, SolarBrain can be used to control the system from our smartphone or our computer while we are at home or even in the field by using the SolarBrain display. We can check the wind loads and the position of the trackers any time. By connecting to our PV installation via SolarBrain, we can choose between certain options, such as restarting the control units or moving the trackers on a specific slope. More options are constantly being added according to users' requests and needs.

Figures 1 and 2 show the Solar Brain screen. On the home screen (Figure 1.) user can choose from a list of options how he wants to handle trackers.

For example, it can clear possible errors or reboot the boards. To see the tilt of the trackers, the user should select the chart option (Fig 2.).

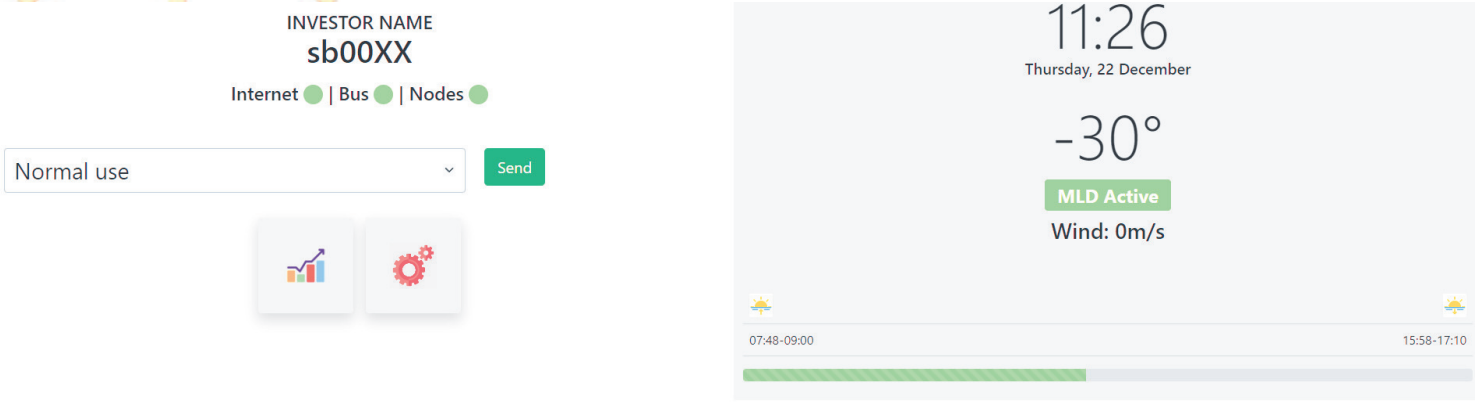


Figure 1. SolarBrain Home Page

Figure 2. SolarBrain diagram