

# Case Study: Surviving the Antarctic Extreme



## Princess Elisabeth Station, Antarctica

Location: Antarctica  
System Size: 3.5kW  
Modules: 14 Soluxtec 250W modules  
Inverter: 2 SMA Sunny Boy WR17

### Summary

Princess Elisabeth Station is a research station funded by the Belgian government in Antarctica. The site is exposed to winds of up to 300km/hour. This combined with the fact that it is only sunny for half the year and faces extreme temperatures made for very challenging conditions for a facility to run entirely on alternative energy. Architects contacted Tigo Energy to see if they would be able to address their remote monitoring concerns and help the station run as smoothly as possible.

### The Solution

Tigo Energy's optimizers have allowed researchers to view conditions at the site and notify them of any issues on the array. They were immediately notified when a storm blew two panels off the array, which proved to be an invaluable alert as the scientists packed two more solar modules with them when they returned to the site in summer. Keeping the station to zero-emissions is an essential part of preserving the environment in the Antarctic. With the help of Tigo Energy optimizers, this station has produced clean, smart solar energy for over two years now.



Figure 1: The Princess Elisabeth Station in Antarctica

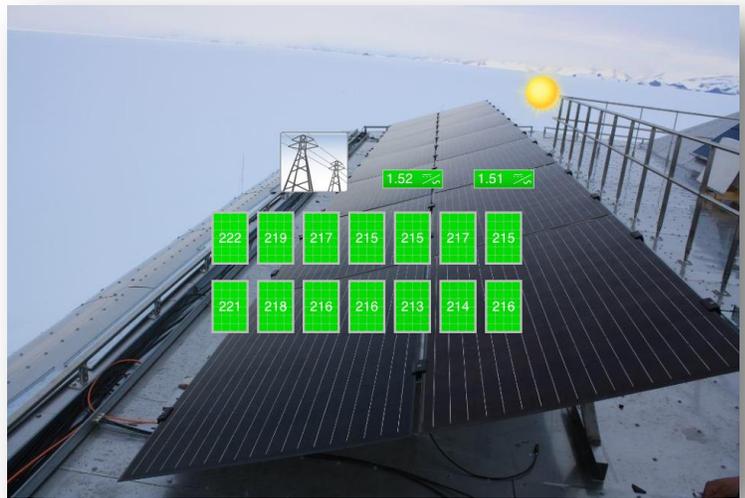


Figure 2: Data center visualization of the system

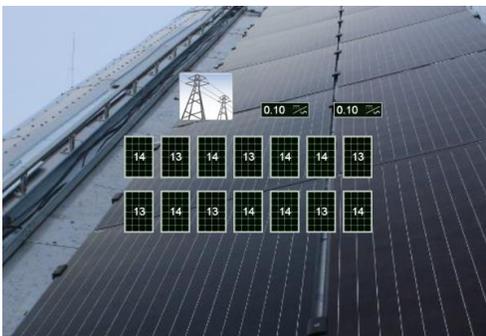


Figure 4: Midnight of Dec. 20<sup>th</sup>, energy is produced

### Land of Eternal Sunshine

While the sun doesn't shine on this part of the world for nearly 6 months a year, the solar panels quickly make up for it once summer comes. Figure 4, above, shows the energy production of the modules at midnight on December 20<sup>th</sup>, 2012. Because the system is so far south, energy is produced 24 hours a day for several months during the summer.



Figure 3: View of the Princess Elisabeth Station Roof