

## Case study

# Off-grid system for street-lighting

## Egypt



### The challenge

Conventional street-lighting projects and installations face difficulties regarding the ongoing system maintenance. When the batteries are installed in enclosures on the poles, especially in desert-like climates like Egypt, the environment is very harsh which effects the lifespan of the batteries.



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Keeping the solar panels clean and sand/dust free in desert environments is also a big challenge and it makes ongoing system maintenance of single street-light installations very problematic.

### Why STUDER

Because of the location of the system, reliability of the equipment was critically important. The temperatures and dust levels in this part of Egypt gets very high and the Studer devices robustness and performance in harsh climates appealed to the customer - by registering the system installation, the customer could also access the Studer 10-year warranty. The setup of the system is also easy in terms of the charge cycle of the batteries because the VarioString units are synchronized with the Xtenders. The generator auto-start is also managed very easily by battery SOC, voltage and/or time of day.

### The Solution

With a centralized system, it is possible to not only better control the environment where the batteries and power electronics is installed, but the maintenance is also much more manageable. With a centralized PV array, it is also significantly easier to clean and maintain the solar panels ensuring maximum yield.

### System components

The system contains the following components:

- 128 kWp PV modules
- 192x 2V battery cells each C20=3780 Ah, OPzS Tubular Batteries
- 12x STUDER Xtender inverter/charger, XTH 6000-48, 230Vac / 50Hz
- 20x STUDER VarioString solar charge controller, VS-120
- 4x STUDER remote control RCC-03
- 2x STUDER Xcom-LAN communication device
- 2x STUDER BSP-1200 battery status processors
- 1x STUDER BTS-01

### Project outcome

With this system design, because of the improved environment and maintenance procedures, the lifespan of system components is prolonged. The PV array is ensuring the full re-charge of the battery bank and the Studer power electronics, managing all aspects of the system functionality. Because of the remote communication capabilities, the system can also be managed from anywhere in the world via the Studer portal.

### The Company

**Hammer Electric S.A.E** is an exclusive agent of DPE-Solar Turkey/UK/US in the territories of Egypt, Kingdom of Saudi-Arabia, Libya and Sudan. «We deliver energy straight from the sun».

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