



## LEAD BATTERIES: ENERGY STORAGE CASE STUDY



### East Penn Manufacturing

## Restoring Power Using Lead Batteries

### Ciales, Puerto Rico

As part of disaster relief efforts following 2017's Hurricane Maria, residents from the Toro Negro Community in Puerto Rico partnered with local businesses and NGOs to restore power and ensure future resiliency.

Pairing a solar microgrid system with lead batteries in the remote, mountainous region of Ciales, provided 26 families with clean and reliable energy.

**“East Penn Manufacturing and its wholly owned subsidiary, MK Battery, are proud to have been a part of such a project to help the wonderful people of Toro Negro get back on their feet after a natural disaster of monumental proportions.”**

Mark Wels, Vice-President & General Manager, Sales – Reserve Power,  
East Penn Manufacturing

### Technical Specification

Collaboration between the Puerto Rico Community Foundation (FCPR), non-profit SOMOS Solar and a key Deka customer Maximo Solar Industries, resulted in an efficient and sustainable energy system for the Toro Negro Community.

By reducing dependency on the electrical grid, the solar microgrid + lead battery storage system ensures future resiliency in the face of extreme weather events.

The system features:

- 312 Deka Solar 8L16 batteries
- 598 solar panels
- 5.54 MWh of stored energy

The system is managed by the community-based organization in the area, with training and maintenance services provided by Maximo Solar Industries.



Particularly suited to microgrid systems requiring minimal maintenance, Deka Solar lead batteries offered the perfect solution for this installation.

With renewable solar energy incorporated into the microgrid system, Deka's Solar lead batteries provide reliable, low-maintenance power where frequent deep cycles are required.

A crucial sustainable element of the clean energy system is the ability to recycle batteries at end-of-life, as Deka's solar lead batteries are virtually 100% recyclable.

### About the Company

East Penn is located at Lyon Station in Pennsylvania and is the largest single-site battery manufacturing operation in North America.

The 520-acre campus uses the most technically advanced methods to manufacture batteries for energy storage, automotive, motive power, and reserve power.

### Technical Summary

Battery specification	312 Deka Solar 8L16 batteries
Capacity	115,440 Ah based on C20 rate
Overall voltage	48V
Overall power output	156.8 kW
Available stored energy	5.54 MWh
Microgrids	1
Total solar panels installed	598
Number of families provided with power	26
Average system size per family	5.6 kW