

# Customer Spotlight:

## Solar + Storage Helps Establishment Labs Maintain Manufacturing Operations During Grid Outages

Establishment Labs is a medical manufacturing facility in Costa Rica that relies on constant access to power to maintain steady operations and prevent financial losses. However, challenges on Costa Rica's power grid leaves the facility subject to frequent power outages. Establishment Labs needed a solution that could ensure its critical equipment would remain operational, even during periods of unstable electricity supply.

### Establishment Labs S.A. Alajuela, Costa Rica

**Start of Operations:** 2016

**Energy Storage:** 500 kW/1 MWh lithium-ion batteries

**Renewables:** 276 kW solar PV

**Grid Services:** daily load reduction, resilient back-up power, solar self-consumption



## The Challenge

For Establishment Labs, the ability to maintain constant uptime amid an unreliable grid was a key priority. However, Costa Rica has established a national goal to be completely carbon-neutral by 2021. This transition to a renewable-heavy power generation mix behind the grid has led to frequent power outages. Meanwhile, the country has implemented several measures and incentives to encourage its businesses to help achieve its carbon goals.

This made Establishment Labs reluctant to rely on diesel-generators—which not only require expensive fuel to operate, but also emit harmful greenhouse gas emissions—to power their facility's equipment during grid outages. This, in addition to the need for on-site power resources that could respond to outages immediately, drove Establishment Labs to pursue behind-the-meter solar PV and energy storage technology.

Accomplishing these goals would require navigating their options for distributed energy resources (DER), determining the right system to fit their needs, and installing and operating the assets to keep their system running and help save on energy costs.

## The Solution

### Solar+Storage to Power Mission-Critical Operations

Enel X worked with Establishment Labs to identify the equipment and facilities that would need to remain operational during an outage. For example, the company determined that equipment in its clean room would need to remain operational to maintain product quality.

With that in mind, Enel X modeled a combined system consisting of 500 kW/1MWh lithium-ion batteries and 276 kW of solar PV that could provide sufficient power for this equipment in the event of grid failures. Enel X also oversaw the installation and integration of the assets within the facility's existing systems.

At the time it was installed, the project was the largest solar-plus-storage system in Central America.

### Optimization Software Automatically Responds to Grid Outages

The system was also equipped with Enel X's DER Optimization Software, which learns all relevant behavior on the facility and analyzes it alongside external data such as tariffs and grid behavior. If the grid experiences any disruptions to electricity supply, the software will immediately and seamlessly transition the load supporting the facility's clean room equipment onto the solar-plus-storage system, enabling it to operate independently from the grid.

The software also transitions load onto the solar-plus-storage system at other opportune moments, helping the company reduce energy spend and greenhouse gas emissions.

## Results

In 2017, Costa Rica experienced a nationwide blackout that cut 1.4 million homes and businesses from the grid for several hours. However, Establishment Labs was able to continue powering critical equipment in its clean room and survived the crisis without sustaining any financial setback.

With Enel X's DER Optimization Software, the facility responded to the power outage immediately and shifted load onto the solar-plus-storage system, supplying power to the mission-critical cleanroom throughout the entire duration of the blackout.

Going forward, Establishment Labs is positioned to withstand power outages that plague businesses in Costa Rica with clean, reliable power available on-site. Furthermore, they are able to reduce energy spend and minimize their reliance on expensive and carbon-intensive diesel fuel for their resilience strategy.