

## Case Study

# Luminis Health Doctors Community Medical Center: Energy resiliency for patient care

Lanham, MD



To update the hospital's outdated electrical system, Unison Energy managed an intensive installation process — ensuring that Doctors Community can now cover critical loads, even during grid outages.

Since its establishment in 1975, Luminis Health Doctors Community Medical Center (LHDCMC) has been on a patient-focused mission to advance healthcare in the Lanham, Maryland community. The hospital's success in fulfilling this mission has allowed it to expand dramatically over the years. Amid this expansion, the hospital faced the urgent task of addressing its old and overloaded electrical system, including utility service transformers, switchgear, and distribution panel boards.

In 2018, the hospital chose Unison Energy to develop and build a turnkey solution that would modernize its energy infrastructure and improve its resilience. Unison Energy, which installs, owns, and operates custom microgrids, implemented a combined heat and power (CHP) system. This system consists of two natural gas-fired, reciprocating, internal combustion engines that can offer electric and thermal energy and support the entire hospital during island mode events.

Unison Energy needed to upgrade the hospital's electrical equipment in order to successfully integrate the new CHP system. Much of the hardware was aging, but the major concern was that the hospital had grown past the capacity of its two existing utility transformers. If one utility feed was knocked out, the hospital did not have sufficient redundancy in place and would have to sacrifice certain loads.

CHP-based microgrid operating at 63% efficiency (HHV)

Two 2.5 MVA transformers

480 V, 3000 A, main-tie-main switchgear

Waste heat used for space heating and domestic hot water

Load following and automatic island mode capabilities

Carbon footprint reduced by 57% or 6,400 tons per year\*

UNISON

\*EPA non-baseload emissions data (eGRID 2016)



*To support the hospital's high energy needs, Unison Energy managed an intensive system upgrade process.*

To support the hospital's high energy needs and insulate it from outages, Unison Energy managed an intensive system upgrade and installation process. Unison brought in 1 MW of on-site electrical generators, along with another 1 MW of backup generation on an automatic transfer switch for redundancy, to fully run half the hospital for several days as it replaced the two existing utility transformers. Unison also coordinated with the utility company to relocate utility meters to a newly designed switchgear lineup, including a brand new 2,000-amp tiebreaker.

For Jerry Dyer, Director of Plant Operations at Doctors Community Hospital, Unison Energy was by far the most cost-effective partner for this energy system overhaul:

*"It didn't cost the hospital a dime out of our pockets to do, and we're able to save about \$300,000 dollars a year on our electric bill."*

At the same time, the hospital is able to take its boilers out of operation for much of the year, greatly reducing its maintenance requirements. As a result, the hospital has reduced its annual carbon dioxide emissions by 57%, or about 6,400 tons every year. And most critically, in the event of a hurricane or blizzard, the lights will stay on, medical equipment will continue to function, and patients will continue to get the care they need.

# Unison Energy

## Who We Are



We own and operate distributed generation systems that operate as microgrids.



We operate systems in CA, MD, NJ, and NY, with additional projects underway.



We finance projects on our balance sheet, with no outside capital required.



We design and implement our systems using internal engineering and project management teams.



We operate our sites using in-house field service technicians, engineers, and a 24/365 staffed monitoring center.