CLEAN ENERGY GROUP CASE STUDY

CrescentCare Community Health Center

Supporting Public Health with Solar+Storage in New Orleans

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CleanEnergyGroup

CLEAN ENERGY GROUP CASE STUDIES

This case study is one in a series by Clean Energy Group (CEG) (www.cleanegroup.org) produced as part of CEG's Technical Assistance Fund, which aims to accelerate the deployment of affordable and reliable power in underserved communities nationwide. This case study series highlights installations of solar photovoltaic (PV) combined with battery storage (solar+storage) to demonstrate their economic, community preparedness, and health benefits.

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Cover image: CrescentCare Health Center. Photo Credit: Together New Orleans.

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LEARN MORE

Clean Energy Group hosted a public webinar in September 2025 focusing on CrescentCare's experience developing solar+storage, highlighting project finances, challenges, and benefits. Slides and a recording of this webinar are available at: www.cleanegroup.org/webinar/solar-storage-community-health-crescentcare

CRESCENTCARE COMMUNITY HEALTH CENTER

New Orleans Community Health Center Installs Solar+Storage to Ensure Continuity of Care to Underserved Populations.

THE CHALLENGE: Power Outages Impact Access to Healthcare

When Hurricane Ida landed in Louisiana in August 2021, it brought with it massive destruction, decimating the area's energy infrastructure. Over 1 million residents lost power, some for weeks. The region was engulfed in widespread power outages, impacting everything from communications to transportation. Electricity-dependent residents—including those that require refrigeration for temperature-regulated medication like insulin, electricity for medical equipment, or internet for telehealth services—faced an immediate health crisis. (To learn more about the impact of power outages on underserved populations, see the Appendix on page 14.)

CrescentCare, a Federally Qualified Health Center and one of the largest community health centers in New Orleans with two locations within the city, was forced to close when their backup diesel generators failed to come online during Hurricane Ida. Without access to local health care during and after the hurricane, residents in need of medical care were forced to either wait for emergency support or travel to already inundated hospitals. Others waited out the outage at home, which can pose a significant risk for those dependent on electricity for in-home medical devices.

This case study highlights the importance of equipping community health centers with reliable backup power by exploring CrescentCare's journey to installing solar and battery storage at their St. Roch location.

The Impacts of Unreliable Backup Power. During Hurricane Ida, the diesel generators at the St. Roch CrescentCare location failed to come online, forcing the health center to close and redirect patients to a secondary location that had an operating natural gas backup power system. CrescentCare was prepared with a backup plan to maintain their stock of temperature-related vaccines and medications through the power outage: transport cold storage from their facility to a nearby community partner facility that was equipped with diesel generators. Unfortunately, the partner facility could not provide access to cold storage as their diesel generators had also failed.

The closure of the CrescentCare facility and inability to provide transport and safe storage of medications and vaccines resulted in approximately $250,000 in losses for the health center. CrescentCare's partner pharmacy, which is co-located in the St. Roch facility that lost power,

estimated an additional product loss of $750,000, including refrigeration-dependent vaccines and medications. When CrescentCare was able to finally get the St. Roch on-site generators functional again, which took approximately five days, they had to overcome steep and time-intensive hurdles in accessing diesel fuel due to supply chain interruptions. Fuel shortages related to supply chain interruptions frequently occur following a disaster, with available fuel often prioritized for hospitals and first responders.

The Role of Community Health Centers

Community health centers, also known as Federally Qualified Health Centers, are a critical part of the healthcare safety net and are important community resources that serve low-income, uninsured, and populations with limited access to health care.

Community health centers serve nearly 34 million Americans annually. They deliver primary care to more than 10% of the US population for only 1% of the total healthcare spending. The services they provide are often at reduced or no cost to ensure access for everyone. [1]

Credit: National Association of Community Health Centers

[1]National Association of Community Health Center (NACHC). "America's Health Centers: By the Numbers." *NACHC,* 14 Sept 2025, www.nachc.org/resource/americas-health-centers-by-the-numbers.

THE SOLUTION: Reliable Power for Emergency Operations

CrescentCare's experience during Hurricane Ida was especially challenging, but not unique. New Orleans ranks among the top 10 cities in the US for power outages caused by severe weather.[2] CrescentCare knew another power outage was inevitable and began working towards ensuring reliable backup power resources. CrescentCare moved away from diesel-fueled backup power systems and opted instead to invest in a 128-kilowatt solar array paired with a 220-kilowatt-hour lithium-ion battery storage system and a 500-kilowatt natural gas generator for their St. Roch location.[3] CrescentCare ensured further redundancy by providing a separate battery system to support the cold storage for vaccines and medications.

The batteries are connected to both the solar array and to the natural gas generator. During periods of lower solar production, such as on cloudy days or during evenings, the natural gas generator charges the batteries. During a power outage, the solar array with battery storage can deliver approximately 175 kW of power when the building is fully operational. At this level of production, the batteries can supply the building for 6 hours. A natural gas generator works to take over when the battery is low, recharge the battery, and then provide power to the whole building during times when CrescentCare is not connected to the main grid. During the day, the building consumes all of the power generated by the system, and at night, the building consumes power from the electric grid.

The St. Roch CrescentCare Community Health Center's solar+storage project, commissioned in March 2024, is the first solar+storage powered health center in the Gulf South. Within the first month of the system's operation, New Orleans experienced a 2-hour grid outage. The solar+storage system performed as expected, serving the health center's entire load and resulting in no essential losses or interruptions in care. The system also provided uninterrupted power during intermittent grid outages in January 2025.

Solar+storage at CrescentCare provides a number of facility and community benefits, including:

Backup Power. The system is designed to provide power to the entire facility which includes vaccine storage, a pharmacy, IT infrastructure, and patient care areas, for no less than 4 hours. The battery storage provides an average of 9 hours of backup power, and combined with the natural gas generator, can provide over 10 days of backup power for the facility.

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[2] Chavez, Roby. "Louisiana Is Building Electricity Hubs to Power Communities After a Disaster. Here's How They Work." PBS, Public Broadcasting Service, 9 Jan 2023. www.pbs.org/newshour/nation/louisiana-is-building-electricity-hubs-to-power-communities-after-a-disaster-heres-how-they-work.

[3] CrescentCare donated the existing 200-kilowatt diesel generator to a local community organization that did not have an existing source of backup power.

Utility Bill Savings. Solar+storage is anticipated to reduce CrescentCare utility bills by 15 to 20%, with projected annual utility savings of $24,000.

Avoided Cost of Outages. Avoided outage costs refer to the financial benefits realized by businesses through the prevention or minimization of power outages. These savings include not only the cost of avoiding the purchase or generation of emergency replacement power during grid failures, but also the reduction of losses related to interrupted operations. This can encompass lost productivity, the inability to serve customers, damage to equipment or perishable supplies, and other operational disruptions.

Battery storage unit at CrescentCare Health Clinic. Photo Credit: CrescentCare.

In the healthcare sector, unplanned power outages present particularly serious challenges. They can result in significant economic losses, disrupt critical medical services, and compromise patient care. Failures in IT infrastructure and service delivery can trigger cascading effects across entire healthcare networks. A 2016 study estimated that the average cost of an outage for a health care facility is $7,900 every minute, with an average of $208,600 in immediate lost revenue.[4] By maintaining power during outages, CrescentCare can potentially avoid costly losses, like the $250,000 in spoiled vaccines and medications after the Hurricane Ida outage.

[4] Harding, Sam. "Healthcare Unscheduled Downtime and Outages Cost." NetTech, 21 Feb 2024. www.nettechconsultants.com/blog/healthcare-unscheduled-downtime-cost/.

New Orleans' First Community Lighthouse

With the installation of solar+storage, CrescentCare became New Orleans' first Community Lighthouse, serving as beacon of safety and stability in times of crisis. The Community Lighthouse Initiative, led by the nonprofit coalition Together New Orleans, equips trusted community-serving organizations with solar+storage systems to ensure they can stay open and operational during outages. The Community Lighthouses provide shelter, charging stations, refrigeration for medicine, and more. So far, ten organizations in New Orleans have been transformed into Community Lighthouses, with an ambitious goal of expanding to 86 sites, to ensure that every resident in the city is within a 15-minute walk of a safe and powered place of refuge when it matters most. In a region increasingly threatened by severe and frequent weather events, the Community Lighthouses play a vital role.

In addition to providing support to communities during outage events, the lighthouses are also a significant investment in workforce development that includes project labor agreements to hire local workers at living wages for all stages of the process.

Learn more about the Community Lighthouse Initiative on the Together New Orleans website: www.togethernola.org

Project Overview

Owner: CrescentCare Community Health Center

Location: New Orleans, Louisiana

Equipment: Solar, battery storage, natural gas generator

Installed cost: $650,000

Building loads supported by solar+storage: 100% of St. Roch CrescentCare Community Health Center, including vaccine storage and a pharmacy. To extend the life of the system during an outage, the system can be directed to only power critical loads, such as refrigeration for medications and vaccines, HVAC, IT infrastructure (including electronic health records), elevators, pharmacy, food pantry, lab, and certain medical procedure areas.

Services provided: Backup power, net metering

Project partners: CrescentCare, CHARGE Partnership, DirectRelief, Together New Orleans, Clean Energy Group

Solar and Energy Storage System Details

Solar System Size: 128 kW solar array

Configuration: Rooftop solar array

Revenue Sources: Solar net metering

Battery Storage System Technology and Size: 220 kilowatt-hour lithium-ion battery

Date of Service/Operation: March 2024

Energy Storage System Owner: CrescentCare Health Center

Funding Sources: Grant from Direct Relief

FINANCIAL DETAILS

Project Costs. The total cost of the solar+storage system was $650,000.

Project Financing. CrescentCare was awarded a $650,000 grant from Direct Relief, a US-based nonprofit. This grant covered the entire cost of the solar+storage system.

Potential Savings. Solar net metering and solar self-consumption with the battery results in annual utility savings of $2,000 per month ($24,000 annually). This is estimated to offset utility costs by an average of 15-20%.

Additional Support: Through a longstanding partnership with Together New Orleans, Clean Energy Group supported the CrescentCare solar+storage project through early advisory and coalition-building support. Other major project contributors include the, the CHARGE Partnership (comprised of the National Association of Community Health Centers, Collective Energy, and Capital Link), and international humanitarian organization Direct Relief, a long-standing supporter of CrescentCare and the New Orleans community.

Direct Relief's Power for Health Initiative

Founded in 1948, Direct Relief is the fifth largest charity in the United States. Their work provides material aid, medicine, medical supplies and grants to more than 90 countries around the world and to health care safety network providers in all 50 US states. Their mission is to improve the health and lives of people affected by disasters and poverty regardless of politics, religion, or ability to pay.

Since funding the CrescentCare solar+storage project, Direct Relief, through the Power for Health Initiative, has invested more than $35,000,000 in 76 grant-funded permanent solar, backup battery storage, and solar+storage installations at community health centers and free clinics across the US and in Puerto Rico.

Learn more at www.directrelief.org

LESSONS LEARNED

Numerous lessons were learned throughout the development and initial operations of the CrescentCare solar+storage project.

Coordination With Qualified Vendors and Contractors is Key. CrescentCare staff had no prior experience in solar+storage power engineering or system development, and a significant investment of staff time was required to fulfill the project management role effectively. One key lesson was the importance of early and consistent coordination among multiple vendors and subcontractors, especially to ensure proper integration of the solar+storage system with the existing natural gas generator. CrescentCare's decision to re-engage the original facility contractors proved valuable; their familiarity with the building's infrastructure enabled smoother upgrades and avoided unnecessary work, such as redundant conduit installation. The team also learned the importance of ensuring that all vendors had a clear understanding of the building's electrical systems, gas line locations, and each other's roles to prevent conflicts and streamline implementation.

Avoided Costs of Outages Can Be Significant. For health centers, power outages can be extremely costly both in terms of revenue loss (patient care and continuity of services) and loss of refrigeration-dependent vaccines and medications. Installing a backup power system allowed CrescentCare to reduce these risks by providing seamless, automatic power during a power outage and avoid the high monetary and social costs of service disruptions, evacuations, spoiled medications and vaccines, and cancelled procedures or appointments. As evidenced by the losses incurred during Hurricane Ida, the cost of a single power outage event can exceed the upfront cost of a solar+storage system.

Supply Chain Delays Can Cause Project Timeline Setbacks. In pursuing this project, CrescentCare had aimed to install solar+storage in time to have reliable backup power before the 2023 hurricane season, which usually peaks in the Atlantic region between mid-August and late September. New Orleans is particularly vulnerable during this time due to its coastal location and low elevation. However, supply chain delays and manufacturing issues caused them to miss that goal. The size of the system and how much energy was anticipated to be sent back to the grid required additional discussion with, and associated delays from, the utility.

Overall, CrescentCare's experience underscores the importance of proactive planning and capacity building to ensure that community health centers can continue serving patients during extreme weather events and intermittent grid failure.

Solar+Storage Microgrids for Rural Community Health Centers

Mendocino Community Health Center, Lakeport, CA. Credit: Collective Energy

Clean Energy Group has partnered with the CHARGE Partnership (comprised of the National Association of Community Health Centers, Collective Energy, and Capital Link) on the Solar+Storage Microgrids for Rural Community Health Centers project.

Funded by the U.S. Department of Energy Office of Clean Energy Demonstrations through the Energy Improvements in Rural or Remote Areas program, the project aims to build energy reliability and security in community health centers to improve access to reliable health care in low-income, rural communities across eight states in the Southeast as well as six federally recognized Tribes.

Through this effort, up to 125 health center sites will be equipped with solar+storage systems, ensuring energy reliability for critical medical equipment, refrigeration of insulin and vaccines, and continuity of care during emergencies and power outages.

Learn more about this project at: www.cleanegroup.org/initiatives/health-and-energy-security/solar-storage-microgrids-for-rural-community-health-centers

APPENDIX: The Impact of Power Outages on Electricity-Dependent and Underserved Populations

Power outages, one of the many consequences of natural disasters, are becoming more frequent and severe.[5] Between 2000 and 2023, roughly 80 percent of all major power outages in the US were attributed to weather-related events.[6] Power outages have increased significantly over the past 20 years: in 2013, the average customer experienced 227 minutes of outages per year, and by 2021, this figure rose to 476 minutes per year.[7]

Access to local healthcare facilities is a critical component of emergency response and support during an emergency event and subsequent power outage. A study from the National Institute of Health shows that outages have significant health consequences, including carbon monoxide poisoning, temperature-related illness, gastrointestinal illness, and hospitalizations relating to cardiovascular, respiratory and renal disease.[8] These effects are particularly severe for individuals who rely on electricity-dependent medical equipment, or who are unable to evacuate due to socioeconomic factors or physical limitations.

Underserved populations, including older adults, lower-income families, and individuals identifying as non-Hispanic Black or Hispanic, are especially vulnerable – with one study finding these demographics as least likely to have a three-day supply of food, drinking water, and medication.[9] Compounding the issue is that outages in underserved communities often last longer, particularly in areas with higher rates of poverty.[10]

For these groups, a power outage can quickly escalate into a medical emergency, often resulting in increased visits to emergency rooms. Hospitals are legally required to maintain backup power,

[5] Molinari, Noelle Angelique M., Bei Chen, Nevin Krishna, and Thomas Morris. "Who's at Risk When the Power Goes Out? The At-home Electricity-Dependent Population in the United States, 2012." *Journal of Public Health Management and Practice* 23, no. 2 (September 11, 2015): 152–59. https://doi.org/10.1097/phh.0000000000000345.

[6] "Research Report – Power Outages From Extreme Weather Are Rising in the U.S." *Water ISAC*. n.d. www.waterisac.org/research-report-power-outages-extreme-weather-are-rising-us.

[7] "Electric Grid Outage Trends Make Case for Fuel Diversity." *National Propane and Gas Association*, December 2022. www.npga.org/wp-content/uploads/2022/11/Electric-Grid-Outage-Trends-.pdf.

[8] Casey, Joan A., Mihoka Fukurai, Diana Hernández, Satchit Balsari, and Mathew V. Kiang. "Power Outages and Community Health: A Narrative Review." *Current Environmental Health Reports* 7, no. 4 (November 11, 2020): 371–83. https://doi.org/10.1007/s40572-020-00295-0.

[9] Bethel, Jeffrey W., PhD, Amber Foreman BS, and Sloane C. Burke PhD. "Disaster Preparedness Among Medically Vulnerable Populations." *American Journal of Preventative Medicine* 40, no. 2 (February 2011): 139–43. www.ajpmonline.org/article/S0749-3797(10)00613-6/abstract.

[10] Lievanos, Raoul, and Christine Horne. "Unequal Resilience: The Duration of Electricity Outages." *Energy Policy* 108 (September 2017): 201–11. www.sciencedirect.com/science/article/abs/pii/S030142151730349X.

and may serve as shelters of last resort, providing access to heating, cooling, and charging capabilities for personal medical devices. As one of the only resources with available backup power, hospitals are often inundated with patients with needs varying from a medical emergency to those in search of a power source to charge medical equipment. One notable example is the 2019 Public Safety Power Shutoffs in California, the largest intentional power shutdown in US history, aimed at reducing wildfire risk. During this period, at least one hospital reported a 30% increase in emergency room patients during these shutoffs.[11]

During a power outage, community health centers could provide support to many patients locally, offsetting the capacity burden placed on hospitals. This is especially true for rural populations, where access to large hospitals is already limited.[12] Unfortunately, local healthcare providers (such as community health centers) are not required to have backup power systems, and many don't have the means for robust backup power systems.

[11] Sherer, Paul M. "Unplugged: How California's Power Outage Disrupted Patient Care on the Northern Coast." *Direct Relief.* 5 April 2023. www.directrelief.org/2019/11/unplugged-how-californias-power-outage-disrupted-patient-care-on-californias-northern-coast.

17. Sherer, Paul M. "Unplugged: How California's Power Outage Disrupted Patient Care on the Northern Coast." *Direct Relief.* 5 April 2023. www.directrelief.org/2019/11/unplugged-how-californias-power-outage-disrupted-patient-care-on-californias-northern-coast.

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