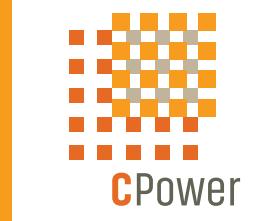
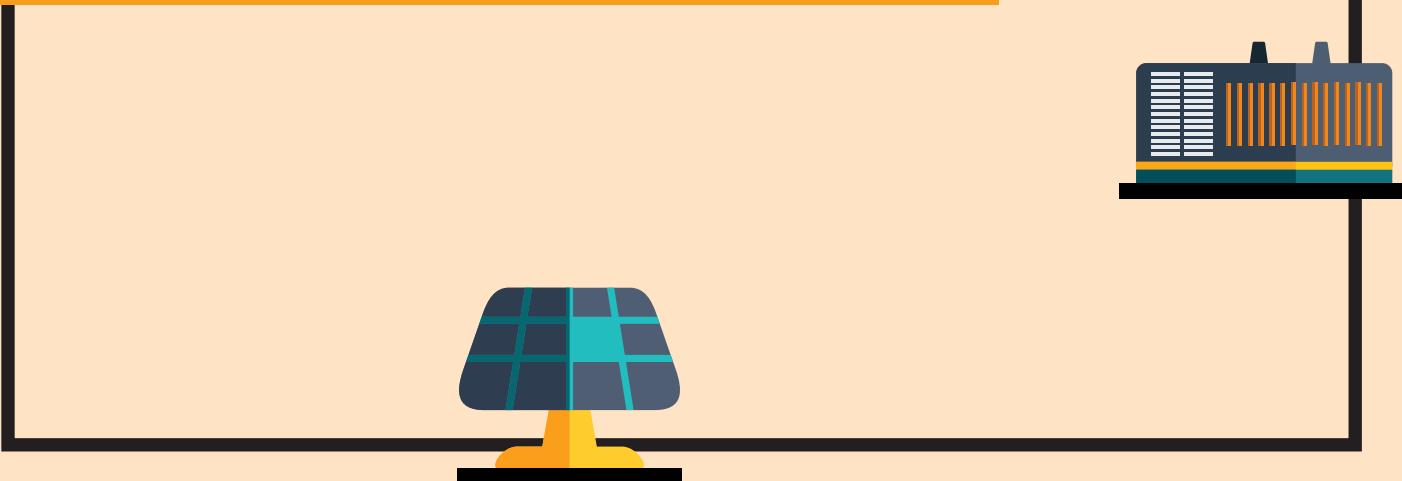


BACK IN THE GAME



September 2018

RHODE ISLAND HOSPITAL'S JOURNEY
FROM THE SIDELINES TO OPTIMIZED
DEMAND-SIDE ENERGY MANAGEMENT





CASE STUDY: RHODE ISLAND HOSPITAL

When a new EPA law threatened demand-side energy management at the largest hospital in The Ocean State, CPower answered the call.

The moment he learned what the EPA's law meant for diesel generators participating in demand-side energy management, Marc Leduc figured he and Rhode Island Hospital had a problem.

The largest hospital in its state, Rhode Island Hospital is the only Level I trauma center for southeastern New England and provides expert staff and equipment in emergency situations 24 hours a day. Round-the-clock electricity consumption is both an operational necessity and a huge expense for the hospital.

For Mr. Leduc, the hospital's Chief Engineer since 2011, executing an optimized demand-side management strategy has proven the best way to offset what would otherwise be a hefty energy spend.

Rhode Island Hospital generates half of the electricity it consumes with its onsite generation plant, consisting of four steam generators and three diesel generators. Even with such self-sufficiency, the hospital still purchases half its electricity from the grid--as much as 5 MW on a hot summer day--which comes with capacity charges that have been on the rise throughout New England for the last several years.

Enter CPower and Demand-side Energy Management.

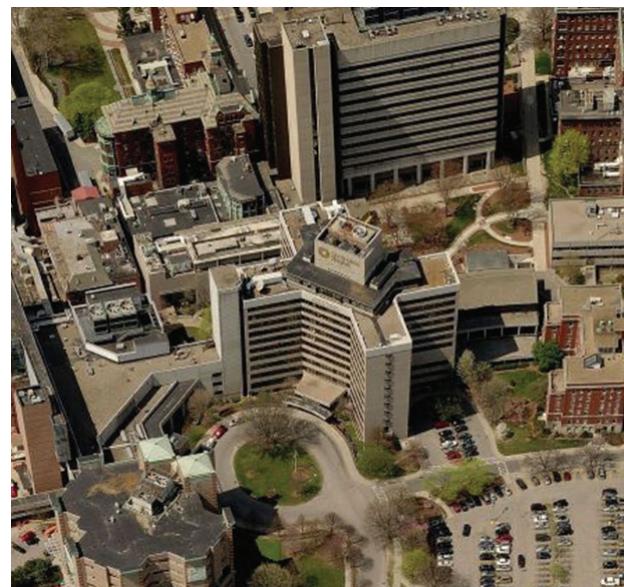
Since 2007, Rhode Island Hospital and CPower's Bill Cratty, a veteran of the energy industry since 1964, have collaborated on a demand-side energy management strategy that allows the hospital to save on electricity costs with peak demand management and earn revenue with demand response.

The hospital's three diesel generators have played a starring role in its demand-side success.

The Challenge: Upgrading to Compliance

Until the Spring of 2017, Rhode Island Hospital used its diesel generator set to power its facilities when the hospital curtailed its load from the grid as part of a peak demand management program, which lowers the hospital's capacity tag and results in reduced capacity charges the following year. The hospital also routinely fired up its generators during demand response events, which pay participants for using less energy when the grid is stressed or electricity prices are high.

For Rhode Island Hospital, optimized demand-side energy management utilizing its diesel generators was essential in offsetting its energy spend.



In 2013, the Environmental Protection Agency enacted the National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines (NESHAP/RICE) to regulate pollutants emitted from stationary diesel engines. Part of those standards allowed for the limited

use of backup generators for demand response. In 2015, the U.S. Court of Appeals for the District of Columbia Circuit overturned the specific rules that allowed backup generators to participate in demand response. Implemented in May 2016, the Court's ruling mandates that only backup generators that meet the NESHAP/RICE standards are permitted to be used during emergency demand response dispatches. Two of Rhode Island Hospitals three diesel generators, each supplying 2 MW, were non-compliant and could no longer be used during demand response events.

"It [the law] was a big hit for us," says Mr. Leduc. "Not only [did we lose] the money we generate from the [demand response] program, but the reduction of the peak load for capacity was probably the biggest hit for us, budget-wise. Capacity charges are right now about 25% of our budget."

Mr. Leduc looked for answers on how to get back into the market and found them when he talked to CPower and Bill Cratty. Mr. Cratty, already intimately familiar with the hospital's demand-side strategy, stepped in and immediately set a course by which the hospital could upgrade its emissions controls so their diesel generators could return to participating in demand response.



Bill Cratty
Senior Technical Sales,
CPower

Has advised Rhode Island Hospital on energy management since 2007

Guided Rhode Island Hospital in their diesel generator upgrade project

Continues to help the hospital optimize demand side energy management strategies

Having worked with Mr. Cratty since 2007, Mr. Leduc knew he could trust CPower's ideas and suggestions, believing they would lead to the hospital successfully returning to the market. CPower recommended a company that could handle the upgrading and permitting of Rhode Island Hospital's diesel generators, which are scheduled to return to full demand response participation by Spring 2019.

Selling Up With a Little Help From Friends

According to Mr. Leduc, convincing the hospital's upper management of the positives related to upgrading their diesel generators was "easy." CPower's Bill Cratty armed Mr. Leduc with figures that showed a clear return on investment (ROI), with future earnings from demand response covering the cost of the upgrades with a payback period of six months.

"The money we're putting in to [the generator upgrade project]," says Mr. Leduc, "is ridiculously small compared to what the payback is."



Ray Berkebile
Senior Director of Engineering,
CPower

Leads CPower's company-wide approach to helping customers comply with new generator regulations

Personally reviewed over 3,000 generators from 2015-2017

Played a key role in advocating on Rhode Island Hospital's behalf to the state's DEP

Advocacy and Guidance

CPower's additional role as energy market advocates proved instrumental in helping facilitate Rhode Island Hospital's generator upgrade project. Ray Berkebile, CPower's Senior Director of Engineering, has led CPower's approach to helping customers deal with EPA regulations concerning diesel generators, personally reviewing over 3,000 generators from 2015-2017.

Mr. Berkebile met with Rhode Island's Department of Environmental Protection (DEP) to educate the agency on the benefits up upgrading diesel generators so they may participate in demand-side energy management and help alleviate both grid stress and high electricity prices. Mr. Berkebile was able to demonstrate that properly-permitted diesel generators can have an impact on the grid's overall balance and health without running for an excessive amount of time.



Toward The Future, Bright With Distributed Energy Resources

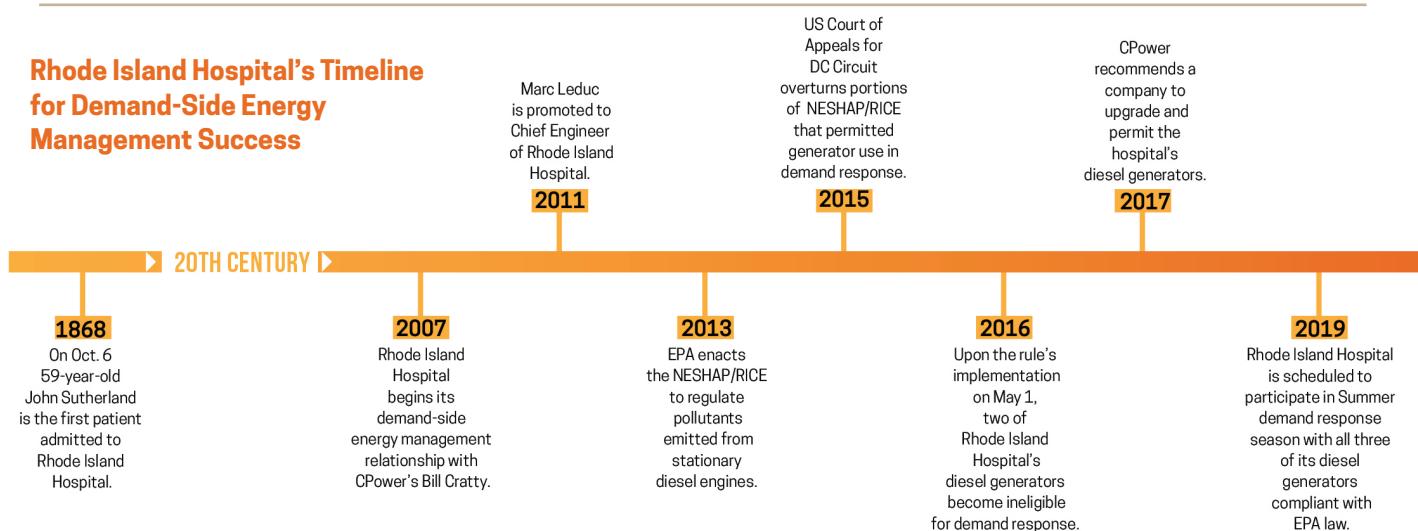
Rhode Island hospital's demand-side energy future is poised to include more than successful peak load management and demand response. With CPower by its side, the hospital is exploring ideas to achieve greater sustainability through distributed energy resources (DERs).

CPower's Bill Cratty believes hospitals, with their need to be operational 24/7/365, are well-suited to take advantage of emerging DER technologies. Rhode Island Hospital is currently exploring options for the installation of solar

canopies on the hospital's parking lots, which would add another source of on-site energy generation to the hospital's current fuel mix. Adding such DER sources contributes to improved sustainability for hospitals that consume power round-the-clock to care for patients and must continue to consume electricity even when the grid is unavailable to deliver it.

With CPower by its side, Rhode Island hospital is set to continue leading the healthcare industry as a shining example of how optimized demand-side energy management offsets energy spend and contributes to increased sustainability.

Rhode Island Hospital's Timeline for Demand-Side Energy Management Success



At CPower, we understand that energy management is not a one-size-fits-all endeavor.

We create optimized demand-side energy management strategies that help businesses streamline their energy usage, offset costs through demand response participation and reach their sustainability goals. CPower is a leading provider of demand-side management services to commercial and industrial customers across the U.S. with 25+ years of knowledge and experience in helping customers implement intelligent energy management programs.

For more information, contact us at 1.844.276.9371

to find out if you could earn payments via Demand Response programs or services that may be available in your region.

Follow CPower on Twitter @cpowerenergy, connect with us on LinkedIn, and learn more about our demand-side offerings at CPowerEnergyManagement.com.

