



# Regional Hospital Relies on DemandSmart for Demand Response and for Reducing Energy Use

Kell West Regional Hospital receives payments for demand response—and reduces its energy bills by more than 30 percent

## Fast Facts:

**Industry:**  
Healthcare

**Location:**  
Wichita Falls, TX

 DemandSMART

**DR Program:**  
EnerNOC DemandSMART in ERCOT

**DR Strategy:**  
Backup generation

**Primary DR Strategy:**  
Temporary activation of on-site backup generator, totaling approximately 300 KW

**Annual Payments:**  
Approximately \$10,000

**Additional savings:**  
Approximately \$50,000

## THE BIG PICTURE

Kell West Regional Hospital is a 41-bed acute care hospital in Wichita Falls, Texas, serving as an important healthcare resource in its community and throughout nearby southern Oklahoma. In all, more than 350,000 residents rely on the hospital, which is one of the few physician-owned hospitals in the United States. Kell West Regional Hospital provides a wide range of inpatient and outpatient medical services in its modern, 445,000 square-foot facility.

In 2008, the hospital chose DemandSMART™, EnerNOC's comprehensive demand response (DR) application, to reduce its energy costs, which were totaling more than \$70,000 a month, making energy one of the hospital's top expenses. The hospital was already using its on-site backup generators for peak shaving, which helped reduce electrical bills during periods of peak usage. So its facilities

personnel were already very comfortable making the transition from the grid to its backup generator.

DemandSMART turns the hospital's on-site backup generators into a new opportunity to earn approximately \$10,000 in annual payments from EnerNOC. Its generator provides short-term electricity generation during demand response dispatches, reducing energy use by more than 300 kilowatts (kW). The transfer to backup generation is invisible to most hospital staff and does not affect patients or sensitive equipment in any way.

Beyond dispatches, hospital leaders also rely on the online energy profiling tools that come free with DemandSMART to identify new opportunities to reduce energy use throughout the hospital. In fact, these software tools



# Case Study | Kell West Regional Hospital



EnerNOC's free energy profiling tools helped the hospital achieve its goal of reducing energy use by 30 percent in just a few months.

helped the hospital reach its goal of reducing energy use by 30 percent, creating significant new savings.

## PUTTING DISPATCH TO THE TEST

When the hospital chose EnerNOC DemandSMART in 2008, it seemed like a great opportunity to earn payments for simply being on call during potential grid issues. "When someone offers to pay us money without a lot of effort, I'm pretty much on board," recalls Terry Stagg, director of emergency and risk management at the hospital.

In his role, Stagg was well aware of the hospital's extensive backup capabilities, provided by its Kohler 500 kilowatt generator. "Our generator has more capacity than we need," says Stagg. "And we were testing it every week under load, so we knew it would come through if we needed it." The hospital is located in a windy area where occasional power loss is inevitable. "Power loss is always a big concern for any hospital," says Stagg. "But we were confident that our generator could keep critical areas, such as our clinical operations and other essential services, up and running no matter what. We had no worries that our generator would be able to handle anything, since we're over-compliant for the size of our building." For the first two years of the hospital's participation in

DemandSMART, the hospital responded to occasional test dispatches. In each test, the hospital met its targets and continued ahead without interruption.

However, a major snowstorm and severe weather conditions in February 2011 put its capabilities to work during a critical emergency. "We had about three feet of snow in one night," recalls Stagg. "And when I woke up the electricity was off at my house. We found out that we were having rolling blackouts across Texas."

In fact, a perfect storm of adverse conditions led to the loss of more than 7,000 megawatts

[MW] of generation, or about 15 percent of Texas' total electricity supply. In response, the Electric Reliability Council of Texas (ERCOT) dispatched EnerNOC's DemandSMART network—including Kell West Regional Hospital. Within minutes, EnerNOC notified customers of the dispatch, and they reduced demand via curtailment and activation of backup generation.

During the dispatch, EnerNOC automatically activates the hospital's backup generation, without requiring intervention from hospital personnel. "I got a call and email from EnerNOC before I even got to the hospital," says Stagg. "And their Network Operations Center had our backup generator running in minutes." Stagg is completely comfortable with remote activation. "We didn't have any concerns about it at all," he says. "It seems like the best way to go, particularly when there are times when no one from my team is at the hospital, like during this recent snowstorm."

Ultimately, this dispatch ended up lasting 25 hours, well beyond the 8-hour maximum length defined by ERCOT's EILS program due to the severity of the emergency. In fact, it's the longest demand response dispatch in EnerNOC's history. During the dispatch, Kell West's generator kept running and the hospital continued to function normally.



Kell West and other participants contributed enough electricity to power more than 25,000 homes during this past winter's major Texas storm.

“We weren’t concerned about running the generator for more than a day,” says Stagg. “We were confident in its capabilities and we had plenty of fuel. So the whole event, challenging as it was for our community, went off flawlessly from a demand response perspective.”

In fact, none of the hospitals in the region lost electricity during the snowstorm, a testament to preparedness and the power of demand response. Kell West and other EnerNOC DemandSMART participants contributed enough electricity to power the equivalent of more than 25,000 homes.

**THE RESULTS**

While dispatches of this duration are highly unusual, it proved the hospital’s ability to respond well beyond the requirements. By helping reduce strain on the grid, Kell West is helping its community—while earning annual payments of more than \$10,000 from EnerNOC.

However, the results don’t stop there. During dispatches, Stagg can log into DemandSMART to view and monitor the hospital’s performance, to see where they stand against their reduction targets. This real-time visibility enables them to make any adjustments necessary to meet their targets and maximize their demand response payment opportunity. In addition, the advanced monitoring and reporting tools that come free

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Terry Stagg, Director of Emergency and Risk Management

with DemandSMART inspired him to take a closer look at the hospital’s ongoing energy use. “I knew that I could log into DemandSMART and see our current energy use even when we weren’t in the middle of a dispatch,” says Stagg. “But I hadn’t done it before.”

That changed in 2010, when Stagg started exploring new ways of reducing energy use. “Using the energy profiling tool really got me thinking,” he says. “It opened my eyes and let me see way beyond just our monthly electric bill.” His first reaction was shock at how much energy the hospital was using every day. But soon, Stagg was experimenting with turning off non-essential lighting, unplugging unused equipment, hunting down illegal space heaters and inefficient coffee pots—and relying on the software’s energy profiling feature to keep a very close eye on the results.

“We were amazed at how much energy we could drop just by making a few simple changes,” he says. These insights inspired even more reductions and empowered hospital personnel to start hunting down new energy savings. The hospital had set an overall goal of reducing its energy use by 30 percent. Thanks to EnerNOC’s free energy profiling tools, it achieved it in just a few months.

“Thanks to EnerNOC, we saved more than \$10,000 in just a couple of months,” he says. “And we’re saving even more as we continue to use their applications to identify new opportunities to reduce.”

**THE BENEFITS**

The critical benefit that EnerNOC DemandSMART brings to Kell West Regional Hospital is financial—including annual payments of

**What is Demand Response?**

Demand response provides payments directly to organizations that choose to reduce energy use during times of peak demand. EnerNOC DemandSMART is the industry’s most comprehensive demand response application, allowing our customers to get the most value from their participation in demand response programs throughout the US, Canada, and the United Kingdom. EnerNOC works closely with customers to define customized energy reduction strategies and ensure successful performance during events. EnerNOC absorbs all costs and protects customers from any penalties that can be incurred for not meeting reduction targets. Demand response helps stabilize your region’s energy resources without requiring construction of new power plants—benefiting utilities, their customers, and the environment.

**Want More Information?**

Kell West Regional Hospital is just one of the many innovative organizations that benefit from EnerNOC’s comprehensive energy management applications.

To find out more, call (866) 366-7820 or visit [www.enernoc.com/get-started](http://www.enernoc.com/get-started).

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\$10,000 and additional savings of as much as \$50,000 from using the energy profiling features that come free with DemandSMART. These funds help the hospital’s bottom line and ensure its survival in a challenging economy. But hospital leaders also benefit from other aspects of DemandSMART, including:

#### **BUSINESS CONTINUITY**

By testing its backup generators regularly and under load as part of EnerNOC DR, Kell West knows that its mission-critical work can continue ahead uninterrupted—during snowstorms, windstorms, and other unanticipated challenges. The hospital was already testing its backup generators regularly and under load to help ensure reliability. EnerNOC DR simply replaces the hospital’s testing program. So the critical work of patient care continues ahead uninterrupted.

“We just participated in a 25-hour demand response dispatch during a major snowstorm without any interruption of patient care,” says Stagg. “EnerNOC DR helps us take excellent care of our patients no matter what.”

#### **MORE ENERGY KNOWLEDGE**

In the past, precise energy use figures weren’t available to Stagg and his team—just a monthly bill. During implementation, EnerNOC engineers installed free, customized metering and monitoring equipment, giving the hospital’s facilities personnel access to real-time intelligence on energy use. Through the DemandSMART online application, Stagg can monitor the hospital’s performance during a DR dispatch and beyond.

More knowledge means more awareness of how certain equipment (e.g., a mobile MRI van that plugs into the hospital) affects use. And ultimately, it means more savings. For example, Stagg is using meter data to verify accuracy and identify any discrepancies in the hospital’s electric bill.

#### **A RESPONSIVE PARTNER**

During the recent dispatch, Stagg had a question for EnerNOC and called the Network Operations Center (NOC)—at 3 a.m. “They were there and answered my questions,” he says. “EnerNOC made the whole process of getting

started with demand response super easy and smooth. They were helpful and easy to work, from our first meeting to installing metering to dispatch. And they still are.”

#### **SUPPORT FOR THE REGION**

By being part of EnerNOC DR, Kell West and other facilities are helping protect the region from blackouts and other issues. As a community hospital, supporting people and ensuring their safety and well-being is a key responsibility for Kell West. EnerNOC DR proves that commitment, enabling the hospital to support the regional power grid—and the people across Texas who rely on it every day.

#### **THE FUTURE**

Kell West Regional Hospital continues to use insights from EnerNOC’s applications to uncover new opportunities for energy savings at the departmental level. And it’s spreading the word about EnerNOC DR to other hospitals and businesses.



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