

Customer Spotlight:

Diversified Fortune 500 Manufacturer Earns Six-Figure Annual Payments for Energy Reductions at its Texas and Illinois Facilities

The Big Picture

You may not have heard of Leggett & Platt. But you'll find Leggett & Platt products in beds, recliners, store shelving, and many other items that are part of your daily life. Leggett & Platt is North America's largest independent manufacturer of a variety of products, including components for bedding, residential and office furniture, carpet padding, drawn steel wire, and automotive seat support. With twenty business units, 160 manufacturing facilities in eighteen countries, and 20,000 employee-partners, Leggett & Platt generated sales of more than \$4 billion in 2008.

Leggett & Platt began exploring its options for demand response (DR) in 2007 as part of its ongoing energy conservation efforts. After careful evaluation, Leggett & Platt chose Enel X as its strategic DR partner because of its national scope, DR expertise, energy intelligence software (EIS), and responsive on-site support.

Enel X's software gives Leggett & Platt the data it needed to do a cost-benefit analysis of the best ways to implement DR at its various facilities. Two manufacturing facilities in Texas temporarily shut down elements of their production lines. Its large facility in Sterling, Illinois temporarily stops production in a rod mill, enabling it to deliver more than 11 megawatts (MW) of energy reduction—making it one of the largest DR reductions in the region.

In all, Leggett & Platt delivers more than 12 MW through its participation in DR, helping to protect the grid during periods of peak use. For participating in DR, it receives payments of approximately \$400,000 annually from Enel X.

Choosing a National Partner for DR

Leggett & Platt is a major manufacturer with more than 200 manufacturing and warehousing facilities in the U.S., as well as facilities in more than eighteen countries. While its facilities are diverse in terms of size and what products they manufacture, one major theme unites them—they are all heavy users of electricity. High-horsepower motors and other manufacturing equipment require a significant amount of electricity, which is one of the company's largest controllable expenses.

Leggett & Platt executives were already familiar with demand response from participating in DR programs in California. They were attracted to significant payments and other benefits offered by EIS, as well as the opportunity to protect the communities where Leggett & Platt facilities are located. "We try to identify any way that we can conserve energy and boost energy efficiency," says Steve Elsea, director of energy services. "We explore these opportunities depending on where our facilities are and what programs are available."



INDUSTRY
Manufacturing



LOCATIONS
Fort Worth, TX
Ennis, TX
Sterling, IL



PROGRAM
Emergency Response Service (Texas), PJM Emergency Load Response



DR STRATEGY
Curtailment Only



ANNUAL DR PAYMENT
Approx. \$400,000

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While determining how to implement DR, Leggett & Platt considered two general approaches. It evaluated multiple DR providers, including Enel X. The company is also large enough to serve as its own Curtailment Service Provider, allowing it to work directly with utilities to reduce energy use during peak periods. However, it decided that the outside expertise and resources of a strategic partner would enable the company to maximize its participation in DR.

In 2008, Leggett & Platt selected Enel X as its national demand response partner. “We were looking for a strong national DR solution provider, one that could support our entire organization, and our local facilities,” says Elsea. “And we wanted a DR partner that doesn’t market energy. We wanted the whole package—deep expertise, national coverage, and local support—and we felt that Enel X delivered exactly what we needed.”

Reliability was also an issue. “When you’re doing DR, you don’t want to make mistakes that affect your company adversely,” Elsea says. “Enel X has deep DR expertise that ensures reliable performance during dispatches. We’d rather partner with experts than take any chances by handling DR ourselves.” The partnership began with evaluations of various Leggett & Platt sites, using Enel X’s energy intelligence software to establish baseline energy use. Working closely with Enel X, Elsea and his team took a careful look at the results for each facility and devised customized DR strategies for each facility.

“We knew we could reduce our load,” says Elsea. “But we just needed to find the best way to curtail. Working with Enel X and our local managers, we looked at the EIS data, as well as the costs and potential benefits, and made decisions based on each facility’s unique capabilities.”

For its Texas facilities, Leggett & Platt found elements of its production lines that could be shut down temporarily—including lighting, specific manufacturing sub-operations, targeted high-horsepower motors (i.e., conveyors, grinders), and more—without impacting the overall operation.

For its extensive rod mill operation in Sterling, Illinois, Leggett & Platt took a different approach. “We did the analysis and determined that it would make more sense, operationally and financially, to shut the rod mill down temporarily,” says Elsea. “By shutting down the mill, we’re able to reduce our demand by more than 11 megawatts—a major reduction to help strengthen the local energy grid. And one that earns much larger payments for us. This approach made sense all around.”

During the temporary shutdown, Leggett & Platt performs maintenance and other work that it cannot complete while the mill is operating.

The maintenance managers at Leggett & Platt facilities receive direct notification from Enel X via email and phone of any upcoming DR dispatches. They work directly with Enel X through any DR testing or dispatches, ensuring that each facility will achieve its target reduction amounts.

The Results

When Leggett & Platt maintenance managers receive notification from Enel X, they quickly implement the specific steps defined in the energy reduction plan. They can reduce the target load in 10 – 30 minutes—well within the respective response times established by local DR programs.

By making temporary adjustments to its manufacturing operations, Leggett & Platt’s facilities in Texas deliver energy reductions totaling approximately 900 kilowatts. And by shutting down its rod mill, the Sterling, Illinois facility delivers 11 MW. In fact, during recent testing, this facility over-performed, delivering more than 13 MW in ten minutes.

These major energy reductions helps stabilize the electrical grid during periods of high demand, while earning Leggett & Platt annual payments from Enel X of approximately \$400,000.

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The Benefits

The most obvious quantifiable benefit that Enel X brings to Leggett & Platt is financial—much-appreciated annual payments that total approximately \$400,000. However, the company also benefits from Enel X’s national scope and demand response expertise, which enables Leggett & Platt to implement DR efficiently and effectively at multiple locations.

Other benefits that DR with Enel X brings to Leggett & Platt include:

Visibility into Energy Data with EIS

During implementation, Enel X installed monitoring equipment that streams Leggett & Platt’s consumption data to Enel X’s EIS platform. Authorized personnel at Leggett & Platt were given usernames and passwords and can log in to Enel X at any time to see their real time energy consumption data. This visibility enabled the company to continue to refine its demand response energy reduction strategy.

Simple Participation

According to Leggett & Platt, participating in DR with Enel X was a simple process—from enrollment to implementation to testing. “The paperwork, planning, and all other elements of the process were seamless for us,” says Elsea. “And thanks to careful planning, the testing went extremely smoothly as well.”

Professional Personnel

“Our people have been very complimentary of the Enel X project managers,” says Elsea. “The Enel X team has been knowledgeable and professional, from program presentation through contract administration to on-site project management and implementation.”

Broad DR Expertise

DR programs vary in terms of the specific details, such as response times, length of dispatches, and number of dispatches. For a national organization like Leggett & Platt, having a partner knowledgeable about all aspects of DR and the available programs was a major benefit. “Enel X was well-versed on all of the nuances in various markets,” says Elsea.

“When we needed detailed information to make decisions, we knew we could get it from Enel X.”

Community Support

By reducing its use of energy temporarily, Leggett & Platt can support and protect the communities where its facilities are located. “Our participation in DR increases grid reliability,” concludes Elsea. “DR is often the last line of defense before brownouts or rolling blackouts occur. Reducing our electrical consumption significantly during peak periods can help—and we’re glad to do it.”

The Future

As Leggett & Platt’s national partner for DR, Enel X continues to work with the company to evaluate all opportunities at other manufacturing facilities throughout the U.S.