

# Customer Spotlight:

## Defense Contractor Deploys Enel X's Energy Intelligence Software for Energy Savings Across Multiple Sites

### The Customer

This defense contractor manufactures some of the most sophisticated products in the world, from vehicles to body armor to computer systems. Its operations are energy intensive and highly sensitive. Plant temperatures need to be constantly controlled, for both employees on the floor and some of its products. The Company is serious about energy management activities as a tool for driving savings, but it must not impact the quality of production processes or outputs.

### The Challenge

The Customer realized that there were significant opportunities to identify savings by tracking and analyzing real-time data, but as a defense contractor, it was limited in the amount of information it could share with a third-party vendor. To give staff members greater control over energy consumption at their facilities, the customer installed an advanced building management system (BMS). Even with additional control, they recognized that savings opportunities were passing them by. They needed a tool that would integrate real-time energy data with information about their tariffs to give them actionable insights.

Adding to the Company's challenges, it maintains a large facilities team that is segregated by site and specialty. The sustainability managers are not always able to work in lockstep with the building techs, making quick operational fixes harder to execute.

### The Solution

The Company coordinated closely with Enel X to ensure a workable solution that would give its facilities teams visibility into their data through energy intelligence software (EIS) without creating any security concerns. Enel X installed a device behind the Company's firewall that streams data from the Company's BMS to Enel X's cloud-based energy intelligence software platform. By installing behind the Company's firewall, the Company was able to regulate exactly what data Enel X had access to. At the same time, it gave both the Company and Enel X the analytical power needed to find energy savings opportunities. The data is reviewed regularly by Enel X's professional services team, which meets on a regular basis with the Company's full facilities and operational teams to discuss energy savings opportunities and priorities.

#### Optimizing Night Shutdown. Savings: \$130k/yr

No matter how sophisticated a BMS, it still requires that someone program it correctly to optimize energy consumption, and even if that happens, on the ground actions can often cause settings to be over-ridden. These two factors often lead to unnecessary energy waste. Prior to deployment of Enel X's software, many of the Company's facilities were not setting back during unoccupied evening hours, costing the company thousands of dollars. One of the standard reports generated by Enel X's EIS is a Night Shutdown Analysis, which compares overnight energy consumption across each site.



#### INDUSTRY

Defense Contractor: Manufacturing and Conditioned Space



#### TOTAL NO. OF SITES

150 Sites Worldwide



#### SITES CURRENTLY USING ENEL X

10 sites across Long Island, New York, and Southern New Hampshire

When the night shutdown report was run for the month of December 2013, it revealed two easy savings opportunities.

First, two facilities actually used more energy overnight than during occupied hours. The team was keeping the buildings at a consistent temperature set point, regardless of the fact that they were unoccupied, and as a result, it required more electricity to heat the building during the cold evening hours. By resetting the BMS to allow the internal temperatures to drift and then heating the building again in the morning before employees arrived, the Company could significantly reduce operating costs.

Second, the report gave the team a benchmark of how each facility was performing relative to the others in the portfolio. If each of the five buildings shutting back at a lower-than-average percentage could adjust its setback protocols to the average setback level (16% demand reduction), the Company could save over \$130,000 a year.

**Holiday and Weekend Setbacks. Savings: \$10,000/yr**

Because they often occur on weekdays or on different days each year, holidays are one of the most common causes of energy waste. Teams have to proactively make BMS adjustments to ensure lighting, HVAC, and other energyhogging systems operate in “unoccupied” mode. With competing demands on time, even building managers highly familiar with their BMS can overlook elements of the setback. For this Company, a quick review of its energy profile highlighted that a number of buildings failed to shut

down on holidays, which was costing \$10,000 a year. In one case, a facility ran on Christmas Eve as if it was a regular workday. Further compounding the waste, the Company set its peak demand for the month on New Year’s Eve. The team took this experience to heart. On the advice of its designated Enel X advisor, the team conducted an “Unoccupied Audit”—a quick walk through over the July 4th holiday, during which the team documented which systems and processes could be adjusted to reduce energy consumption.

The same wasteful activity occurring over the July 4th holiday was present on the average weekend as well. The unoccupied audit revealed that lights, HVAC systems, and TV’s displaying digital signage didn’t shut off during non-working hours. The Enel X advisor is now working with the Company’s local utilities to secure rebates to fund the installation of timers for equipment like the digital monitors.

**The Benefits**

Beyond the financial implications of better energy management, the biggest benefit this Company sees from its engagement with Enel X is the ability to align a diverse set of stakeholders. Sustainability managers, facility managers, energy engineers, BMS technicians, and HVAC technicians from all 10 facilities join the regular check-ins, which are facilitated by a designated Enel X energy advisor. As a team, they walk through the savings opportunities surfaced through the software and discuss upcoming priorities and projects.

*The Company’s Night Shutdown Analysis provides an at-a-glance ranking of how well each facility is shutting back at night (gray box). It further quantifies the financial potential if each of the five underperforming sites (red inside the gray box) adjusts its setback schedules to reduce demand by 16% at night, the average across the portfolio (green box). For this Company, those adjustments could save more than \$130,000 annually (purple box).*

Parameters				Results			
Day Start Date/Time:	Jan 01,2014 12:00 PM	Total Locations in Report:	10				
Night Start Date/Time:	Jan 31,2014 12:00 AM	Number of Locations below Average Shutdown:	5				
Duration of Comparison Period:	1 Hour	Average Night Shutdown:	16%				
Typical Unoccupied Hours (hours/day):	10 Hours	Total Potential Energy Savings (kWh/year):	1,219,100				
		Total Potential Cost Savings (\$/year):	134,101				

  

Top 5 Performing Locations	
Location Name	Night Shutdown
GNV2	47%
GNV4	36%
MER18	32%
MER24	24%
GNV1	24%

  

Portfolio Data									
Location Name	Night Shutdown	Average Day Demand (kW)	Average Night Demand (kW)	Difference (kW)	Potential Additional Reduction (kW) (Reduce by this amount to match average night shutdown.)	Potential Annual Energy Savings (kWh/yr)	Tariff (\$/kWh)	Potential Cost Savings	Night Demand Target (kW) (Reduce to this demand level during unoccupied hours.)
GNV3	-22%	287	349	-62	108	394,200	\$0.1100	\$43,362	241
MER26	-8%	690	725	-35	146	532,900	\$0.1100	\$58,619	579
MER12	4%	368	352	16	43	156,950	\$0.1100	\$17,264	308
MER23	6%	291	272	19	28	102,200	\$0.1100	\$11,242	244
MER15	13%	283	246	37	9	32,850	\$0.1100	\$3,614	237
GNV1	24%	496	368	118					
MER24	24%	472	357	115					
MER18	32%	31	21	10					
GNV4	36%	363	234	129					
GNV2	47%	127	67	60					



The energy profile for the month of December shows that this facility failed to shut back on Christmas Eve (red box), and shows that this facility set its monthly peak demand charge on New Year's Eve (green dot). Adjusting holiday schedules to reflect unoccupied status resulted in \$10,000 a year for this customer.



Armed with the right data and a clear plan, the team was able to institute a new weekend setback protocol (the blue shaded pillars). The above screenshot shows that this facility is consistently shutting back each weekend.