

Customer Spotlight:

Global Life Sciences Innovator Boosts Ongoing Efficiency with Enel X Energy Intelligence Software, Saving More than \$75,000 Annually

The Big Picture

EMD Millipore is a life sciences leader that provides cutting-edge technologies, tools, and services for bioscience research and biopharmaceutical manufacturing. By delivering scientific expertise and innovative solutions, Millipore enables its customers to confront the world's most critical human health issues—and to address other complex challenges. EMD Millipore is a division of Merck KGaA, the world's oldest pharmaceutical and chemical company.

In 2007, Millipore embarked on an ambitious and ongoing effort to reduce its energy use—and ultimately lower its carbon footprint by 20 percent. To achieve this objective, Millipore deployed Enel X's energy intelligence software (EIS) to manage energy consumption. By collecting and analyzing real-time energy data and leveraging the resources of Enel X's professional services team, Millipore was able to quickly identify many opportunities for operational improvements—resulting in more than \$75,000 in annual savings.

Fine-Tuning a High-Performance Building

When Paul Lukitsch, Millipore's global energy manager, describes the need for EIS, he uses an apt metaphor. "Imagine that you buy a high-performance car, like an Audi or Mercedes, but you don't bother to ever get it tuned up," he says. "So you end up getting bad gas mileage and wondering why so many things are going wrong. It's the same with investing in an expensive, high-performance building. If you don't do persistent commissioning, you're not going to achieve the kind of savings you anticipated. And you're going to have performance issues."

Opened in 2006 to much acclaim, Millipore's \$50 million research and development center represents the bricks-and-mortar equivalent of a sports car. This state-of-the-art, 130,000 square-foot center mixes sophisticated labs and office space, creating a uniquely collaborative environment dedicated to fostering biopharmaceutical innovation. But from the start, the center faced energy



INDUSTRY

Life Sciences/
Biomanufacturing



LOCATION

Eastern
Massachusetts



ANNUAL SAVINGS

Approx. \$75,000

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—Robert Cunkelman, Facilities Engineering Manager

“We’ve done a lot of energy efficiency projects and were starting to wring the rag dry. Now we have skilled people who can look at our building data and make it meaningful to us—helping us tune and run our buildings more efficiently on an ongoing basis.”

—Paul Lukitsch, Global Energy Manager

efficiency challenges. To save money, Millipore elected to not commission the building. The result? The building had chillers and boilers fighting each other, technicians working third shifts, and major performance issues.

Millipore already had a sophisticated building management system (BMS) in place at its research and development center. But data alone wasn’t going to optimize ongoing management of the building. “We already had a BMS, but we needed a solution that would mine and filter the raw data to identify new opportunities. Enel X brings a clarity and objectivity to commissioning that we couldn’t achieve with in-house resources,” says Cunkelman.

Implementing Enel X’s software began with taking a careful look at all aspects of how the research and development center operates. During this stage, Enel X collaborated closely with Millipore, including direct contact with the facility’s HVAC technician, since many of the findings related to HVAC operation.

Optimizing operations in a building with such diverse uses is a multi-layered challenge. Some laboratories have temperature and humidity flexibility but others do not. When identifying possible efficiency improvements, Enel X had to reality-test these options with the technicians and building managers who had detailed knowledge of who was working where—and their specific requirements. After all, the suggested changes could not affect sensitive research and development projects. “For some of our labs, temperature stability is really important and the conditions need to be tightly controlled,” says Lukitsch. “It’s critical to have the involvement of the technicians who know the building best.”

The Results

The energy efficiency improvements identified by Enel X’s professional services team include replacing malfunctioning components, addressing filter and complex building pressure issues, optimizing scheduling for the best energy benefit, and adjusting for seasonal scheduling. “Every month, Enel X reviews its findings with us, including identifying equipment issues where something doesn’t seem to be operating for maximum efficiency,” says Lukitsch.

“Our Enel X team has the analytic capabilities and deep knowledge that we need to identify achievable efficiency increases.”

Optimizing operation is a collaborative effort between Enel X and Millipore. The monthly discussions offer an opportunity to explore all options, see where issues are interrelated, and set priorities. “We’ve learned to discriminate and to really look at the cost/savings analysis,” says Cunkelman. “That lets us zero in on the changes that will make the most impact, increasing efficiency and generating savings.”

Ultimately, Millipore has implemented efficiency changes resulting in more than \$75,000 in annual savings. “Enel X achieved energy efficiency increases and new savings over and above what we had been able to do ourselves,” says Lukitsch. “We are definitely achieving a fast return on our investment.”

The Benefits

The critical benefit that Enel X delivers to Millipore is the ability to make major, ongoing progress on achieving corporate efficiency targets.

Enel X also delivers the following additional benefits to Millipore:

Ongoing Efficiency Increases

“We’ve done a lot of energy efficiency projects and were starting to wring the rag dry,” says Lukitsch. “Now we have skilled people who can look at our building data and make it meaningful to us—helping us tune and run our buildings more efficiently on an ongoing basis.” Enel X helps Millipore maximize efficiency over time, instead of just making one-time changes that may not stay in effect over the long-term.

Resilient Cost Savings

In the first year of the EIS deployment, Enel X identified more than \$100,000 in possible efficiency savings. Ultimately, Millipore decided to move ahead with projects that achieved savings of more than \$75,000. And these savings continue to accrue over time, since Enel X performs continuous analysis to ensure that building systems do not drift back into less-efficient, more costly operational patterns. In short, Enel X ensures that operational and behavioral changes—and their associated savings—endure, season after season, year after year.

Data-Driven Efficiency

Millipore already had a lot of data about energy use at its research and development center, thanks to its sophisticated BMS. However, data alone does not ensure efficiency. Enel X brings Millipore deep, real-world energy expertise

that leverages new insights from this data. And it makes information readily available and understandable via online tools, dashboards and reports. The combination of software and expert personnel enables Millipore to identify real, achievable changes that boost efficiency and save money.

No Impact on Lab Functionality or Occupant Comfort

Enel X helps Millipore operate its R&D facility as efficiently as possible—without affecting sensitive labs. The Enel X teams detailed knowledge of the building, combined with its close collaboration with building technicians, ensure that any changes implemented are invisible to the scientists and researchers who rely on Millipore’s lab facilities for critical work.

Close Collaboration

Enel X works with Millipore executives, on-site facilities team, HVAC technicians, and other key personnel. This close collaboration helps ensure that potential energy efficiency improvements are explored from all angles—and that the best possible changes are implemented correctly.

The Future

Millipore’s decision to implement Enel X’s software at its research and development center was driven by the importance of the facility; as well as the availability of building data. As it moves ahead, Millipore is looking to deploy Enel X’s software to older facilities that may not have sophisticated building management systems.