

Case study: BD Medical



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“ This program is really a partnership, an ongoing relationship between BD Medical and Utah Power, and it’s a win-win situation. We not only gain an economic advantage, we can also reduce our impact on the environment. ”

Travis J. Anderton

Facilities Engineering Manager/EHS Manager, BD Medical



From left to right: Lee Kimball, Utah Power; Ron Pedler, BD Medical; Chris Kanoff, Utah Power; Wayne Holt, Mike Holt, Holt Lighting, Inc.; Glen Anderson, etc Group; Not pictured: Travis Anderton, BD Medical.

at a glance

BD Medical

Sandy, Utah

Project:

Lighting, compressed air system upgrades in 560,000 square foot manufacturing facility

Energy consultant:

Compressed air: etc Group, Inc.

Contractors and Suppliers:

Lighting: Holt Lighting, Inc.

Compressed air:

Flow Solutions, Inc.

Maddox Compressor Co., Inc.

Mechanical Service and Systems, Inc.

Power Service of Utah, Inc.

Annual energy savings:

\$62,665 (2,088,760 kwh/year)

Project costs:

\$383,412 before incentives

-168,570 incentive payment

\$214,842 after incentives

Simple payback:

6.1 years before incentives

3.4 years after incentives

Other benefits:

- Facilitates maintenance of ISO certifications
- Increased plant production through reduced down time
- Lower impact on environment through lowered energy consumption
- Improved employee comfort and satisfaction

Case study: BD Medical

BD Medical is a leading global supplier of hypodermic needles and syringes, infusion therapy devices, insulin injection systems and prefillable drug delivery systems for pharmaceutical companies. The company has been very effective at using Utah Power's incentive programs to integrate energy efficiency into ongoing projects at its 560,000 sq. ft. manufacturing facility in Sandy, Utah.

Projects

The first energy efficiency project the company undertook with Utah Power's help was completed in 1995. Since then, BD Medical has been in the process of completing a comprehensive set of energy efficiency projects through Utah Power's incentive programs: first lighting, next compressed air, then HVAC/lighting controls and pump system improvements. This is an effective way to approach efficiency projects (one by one, starting with simpler changes). This case study is focused on BD Medical's completed lighting and compressed air retrofits.

Lighting

Project 1 (completed in 2001): An Utah Power energy analysis recommended the replacement of 2,200 existing fluorescent, incandescent and mercury vapor fixtures with more efficient fixtures. BD Medical's lighting contractor, Holt Lighting, changed T12 fluorescent fixtures to T8 with electronic ballast (some fixtures were delamped as well). Incandescent exit signs were upgraded to LED. Incandescent lamps went to compact fluorescent lamps. Finally, mercury vapor fixtures were switched to compact fluorescent lamp fixtures.

Project 2 (completed in 2002): A year later, BD Medical implemented a second lighting retrofit project with Holt Lighting: more T12 fixtures were retrofitted to T8s with delamping, 400 watt metal halides were replaced with 4 foot, 4 lamp T8 fixtures with electronic ballasts.

Compressed air

Project (completed in 2003): BD Medical was experiencing significant production down time because of problems



with their compressed air system. The company has two compressed air systems – the main system includes three compressors (two 350 hp and one 300 hp) and three twin-tower unheated desiccant dryers and a new 300 hp variable speed drive compressor. The other has one 300 hp compressor and one heated twin-tower desiccant dryer. Utah Power’s energy analysis report recommended and BD Medical implemented these upgrades:

- **Compressor controls.** BD Medical owned a compressor sequencer and this was installed and commissioned. Modifications to piping connected the two compressor systems allowing the main compressed air system to meet system loads without excessive pressure drops.
- **New air dryer system.** A upgrade/replacement of the air drying system with new externally heated atmospheric blower dryers reduces dryer energy consumption and increases the compressed air system capacity. Air loss valves at receiver and cooler drains were also installed.

Prior to the upgrades, BD Medical normally ran five compressors and four dryers. Now, in spite of increased production and air demand, the company runs just three compressors and three dryers.

Benefits

BD Medical’s company motto is “To Help All People Live Healthy Lives.” In keeping with this belief, the company was looking for the continuous improvement processes directly related to environmental concerns. The Energy FinAnswer® projects BD Medical has completed helps them meet ISO 9001 and ISO 14001 certification standards. By reducing electrical consumption, the company is able to reduce the impact on the environment, since less electricity is generated to meet their needs.

Another benefit BD Medical realized through these projects is reduced production down time because of the compressed air system upgrade. They were able to increase plant production by 20 percent so the demand on the product side increased from 100 percent to 120 percent. In a year and a half, they’ve seen 20 percent growth, adding additional processing lines, molding presses, and assembly equipment. At the same time, they are using less energy because compressed air is not being wasted.

With the lighting upgrade projects, BD Medical has been able to increase the illumination inside the facility. They’ve received much positive feedback from employees, who are pleased not only with the improved work conditions, but also with the company’s innovative energy and cost-saving methods.

Details by project

Energy efficiency measure (EEM)	Demand savings (KW/mo)	kwh/yr savings	\$/yr savings at 0.03	EEM cost before incentives	Incentive	EEM cost after incentive	Incentive as % of EEM cost	Simple payback before incentive	Simple payback after incentive
2001 lighting retrofit	68	533,023	\$15,991	\$81,535	\$21,213	\$60,322	26%	5.1	3.8
2002 lighting retrofit	23	241,076	\$7,232	\$20,428	\$6,632	\$13,796	32%	2.8	1.9
Air compressor controls	17	177,652	\$5,330	\$12,132	\$6,066	\$6,066	50%	2.3	1.1
New air dryer system	65	1,137,008	\$34,110	\$269,317	\$134,659	\$134,658	50%	7.9	3.9
total	173	2,088,759	\$62,663	\$383,412	\$168,570	\$214,842	44%	6.1	3.4



Savings

Overall, Utah Power incentives to BD Medical since 2001 total approximately \$168,570 or nearly 45 percent of the cost of the retrofits, bringing the simple payback from just over six years to about 3 years. The energy cost savings is about \$62,600 annually.

About Utah Power's energy efficiency incentive programs

Utah Power has helped commercial and industrial customers save money and improve energy efficiency for more than a decade. In Utah, our FinAnswer Express® program helps eligible customers upgrade to energy-efficient lighting, heating and cooling, premium efficiency motors and more.* The program includes both technical expertise and financial incentives. Customers can choose a Utah Power Energy Efficiency Alliance vendor or an independent energy consultant for technical expertise, and financial incentives are available for up to 50 percent of the eligible costs of qualifying energy efficiency measures.

In addition to this program, Utah Power's Energy FinAnswer® helps eligible Utah businesses build energy efficiency into new construction and more comprehensive system retrofits. Energy FinAnswer includes investment grade energy engineering assistance and financial incentives for up to 50 percent of the eligible costs of qualifying energy efficiency measures.

The Self-Direction Credit program is a third option for larger customers using at least 5,000,000 kwh/yr or 1,000 kw.

**Also included in the program are LED traffic signals and refrigerated beverage vending machine occupancy sensors.*

Do the bright thing

For more information on how Utah Power can help your facility save energy and money:

- call our **Energy Services Hotline at 1-800-222-4335**
- e-mail **energy.expert@pacificorp.com**
- visit our Web site at **www.utahpower.net** and click on **Business** and **Save Energy & Money**.

Because we have some requirements to qualify for an incentive, it is important to call us **before** you start your project.

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