

Electricity: A Cost You Can Control

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Pick up any newspaper or magazine today and you'll find an article about electricity. Electricity costs are rising and in some areas of the country electricity is in short supply. The cost of electricity is a component of your product cost, just like steel, aluminum, plastic, or any other component used to create your product. While we work hard to control the cost of components going into our products, we seem to overlook electricity or look at it as a cost that cannot be controlled. While we might have trouble controlling its cost, we can certainly control its consumption.

63% of a manufacturing company's electricity bill is consumed by running electric motors. Baldor Electric Company is a medium-sized manufacturer with sales last year of just over \$600 million dollars. Our electricity bill in the first quarter of 2001 rose by 18%. We would not allow anything else that we pay over a million dollars a year for to increase this much in price. So let's not accept these big increases in electricity without doing something about it.

Since 60% of our electric bill in industry comes from operating electric motors, let's figure out how to improve the efficiency of those motors and reduce our electric bill at the same time. While most efforts to conserve energy involve an unpopular tradeoff, the use of high efficiency motors does not. We can turn up our air conditioning thermostats and sit in buildings that are too hot, or we can drive smaller cars fewer miles. These sacrifices will save energy, but at an undesirable cost.

Using high efficiency electric motors does not involve unpopular sacrifices. An industrial motor will often use 40 times its original cost in electricity in the very first year. To put this another way, over 97% of the lifetime cost of a motor is its electricity consumption. With this in mind, industrial motor users should select a motor with the highest efficiency when replacing failed motors or purchasing new equipment. The small premium you pay for a high efficiency motor is often earned back in the first year depending on the duty cycle the motor is operated at and the cost of power. The savings in electricity will then continue year-after-year. Since motors often last 15 to 20 years, the savings can be substantial, if the right decision is made up front.

Further savings can be achieved by using adjustable speed drives in certain applications, particularly pump and fan applications. In some cases, an adjustable speed drive will allow you to save as much as half of the electricity consumed by an electric motor. Running an adjustable speed drive may also allow you to achieve other efficiencies in the process. Presently, only 5 to 10% of all industrial motors are equipped with adjustable speed drives and according to the Department of Energy, as many as 25% could be, or should be.

A recent Department of Energy study concluded that if all motors were replaced with today's high efficiency motors, and if drives were used where appropriate, up to 18% of our electricity consumption in industry could be saved. This amounts to billions of dollars of savings that could be used to improve industry's profitability or competitiveness in world markets. Also, we might see the price of electricity, natural gas, and coal drop, if its demand was dropping.

In industry today, many times the person paying the bill for electricity does not know what creates this cost. The flip-side of this is that many of the people making the decision for the purchase of electric motors do not know what they cost to operate. At Baldor we put the efficiency of every motor we make on the nameplate. We label the boxes of our high efficiency motors with an energy guide label, similar to those you find on appliances. We also provide free software to help industrial users calculate the cost of operating electric motors. We're trying to help as many people as possible understand how much it costs to operate electric motors and that these costs can be reduced.

As we in United States industry face more competition from producers around the world, and as we try to produce products that can be competitively sold around the world, we must always remember that electricity is a substantial part of our cost and it is a cost that can be controlled in part, by using high efficiency motors and drives.

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