

## You CAN Control Utility Costs

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Good news! There is a lot that can be done to reduce your utility costs. Better news! Much can be done without spending a dime on capital improvements!

There are plenty of modern, high-tech facilities that are spending double what they should be spending on utilities. At the same time, there are many old facilities, with relatively inefficient plants and very low utility costs.

For those of you with existing facilities, investing in an energy-efficient retrofit is not a guarantee of lower utility costs. There are many examples of projects that have failed to realize the energy savings that were projected. In some cases, the technologies implemented were flawed. In other cases, the facilities simply weren't operated properly.

First, understand what makes up your monthly "utility cost." Do this by getting copies of the last two years of electric and gas bills and enter them into a spreadsheet.

For electricity, list each monthly bill starting with the billing period, the number of days in the billing period, kWh, kWh cost, KW and kW cost. Calculate your daily kWh usage and your average kWh cost. Last, total the kWh and cost column for each year.

Do the same for your gas bill.

The next step is to analyze your electric bills. If you have put your information in a spreadsheet, it's a good idea to graph your usage. A picture is worth a thousand words, and seeing usage graphically compared by the time of year is very informative.

What you want to do here is look at your consumption and ask yourself if it makes sense. You are looking for general trends that might indicate a problem area. You don't need to be an expert. As the facility operator, you have the best idea of whether or not the energy usage profile makes sense. Some ideas of what to look for include:

- o What month does your peak kW and kWh usage take place? In our case, we use a lot of air-conditioning during the summer. By adding the electrical load from the air conditioning to our normal refrigeration, lighting load and miscellaneous equipment load, our peak electrical and demand usage should be during the summer months.

- o Compare usage from one month to the next and if there is a significant difference, try to understand why. Compare one year's usage to the next year's and make sure that they are similar. Significant differences should be explored.

- o To further investigate your usage, you can ask your utility company to conduct a test of your hour-by-hour electrical usage. Many skating facilities are large power users, so this information is already being monitored by your utility provider and is readily available. I highly recommend the hour-by-hour test for help in identifying problem areas.

You should see that the bulk of your monthly utility bill is related to electrical use.

Depending on your rate schedule, you may be paying a significant amount in kW charges. Some

utility schedules "penalize" you based on your 12-month peak by taking your current peak kW usage and averaging it with your highest usage during the past 12 months. If this is how your rate schedule works, you need to know this.

Get copies of your utility rate schedules. Understand how your schedule works and also ask your utility company to do an analysis of whether you should switch to a different rate schedule. I like to calculate what my monthly bill should be and compare it to my utility bill. It is not uncommon to find errors in utility bills.

Once you have the most recent two years of data, you should enter each new month's utility usage into the spreadsheet and compare usage to the prior month and to the same month in previous years. Doing this simple task can save you a bundle by identifying out-of-control usage. If your usage is up, you need find out why. By monitoring energy usage we have found many problems that otherwise would have gone undetected. Problems we have discovered include electrical contactors welded shut, keeping equipment running continuously, time clocks that have failed and are not turning equipment off, plugged air filters and broken fan belts.

Now that you know how much energy your facility uses, you can compare it to other facilities with similar operating parameters.

Actual examples:

Skatetown - single-sheet 921,240 kWh (initially a single-sheet facility)

Northern California - single-sheet 3,125,000 kWh

East Coast - single-sheet 1,305,000 kWh

Lake Tahoe - single-sheet 617,768 kWh

Massachusetts - single-sheet 897,640 kWh

Skatetown - dual-sheet 1,305,360 kWh

Southwest - dual-sheet 2,529,600 kWh

Usage can vary greatly depending on factors such as climate and building type, design and size, etc. Using the actual energy usage above, if you are the northern California single-sheet facility, you can do a quick calculation to determine how much could be saved. Example:

Northern California - single-sheet 3,125,000 kWh

Skatetown - single-sheet 921,240 kWh

Annual kWh savings:  $2,203,760 \times \$0.08 \text{ per kWh} = \$176,300$

For this operator, the potential savings are huge. On the other hand, if your usage is equal to or lower than the norm, you may want to move on to other items on your to-do list.

Once you have done this, you now know much more about how your facility uses energy and how your electrical usage compares to others.

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