

*As seen in March 2014*

# PALLET ENTERPRISE

## Top Ten Low-Cost/No-Cost Methods for Reducing Energy Costs

By Ralph Russell



**H**ow would you like to reduce the cost to produce a wooden pallet? I'm hearing a loud YES from pallet plants around the country. I'm sure your first question is "What is it going to cost me to reduce the cost of pallet production?" Your next question is most likely, "How long will it take to get my investment back?" My answers are: (1) little to no cost and (2) almost instantaneous return on investment. Do I have your attention?

My suggestions involve a subject that I have studied since I studied at the University of Kentucky in 1965 – ENERGY. When you think about reducing energy costs, these things come to mind: more efficient equipment, automation, equipment removal and maintenance. Did you know that there are many methods to reduce energy costs without reducing energy consumption? This article is going to provide several suggestions to help you discover

low-cost/no-cost methods to reduce energy costs at your pallet plant or lumber mill.

### **Rate Schedules**

There are usually electricity rate schedule options for commercial and industrial customers. While rate schedules are designed to send certain financial signals to influence customer energy usage patterns, there are times when simply changing to a different rate

schedule may result in an energy cost reduction.

Look for alternative electric rate schedules available from the local utility. It is usually the customer's responsibility to explore rate options and to request a change. Recently I worked with a customer to explore rate schedule changes for three of his electric accounts. An energy cost savings of



## Top Ten Low-Cost/No-Cost Methods for Reducing Energy Costs

1. Rate Schedule Change
2. Taxes
3. Rebates
4. Utility Contract
5. Metering
6. Billing Errors
7. Demand Response
8. Operational Changes
9. Networking
10. Walk-Through Energy Audit

17.4% was identified just by changing rate schedules.

### Taxes

Federal and state tax deductions and incentives are available for many projects. The U.S. Department of Energy DSIRE™ (Database of State Incentives for Renewables & Efficiency) [www.dsireusa.org](http://www.dsireusa.org) is a great starting point when looking for financial incentives. One of my favorite tax deductions was IRS-179D Deduction for Energy Efficient Commercial Buildings. This deduction expired December 31, 2013, but you may still be able to take advantage of this deduction for work performed on a commercial building's interior lighting systems, heating, cooling, ventilation, and hot water systems, or building envelope between 2005 and the end of 2013. The taxpayer claiming the tax deduction must obtain certification of the requirements from a qualified individual.

Also, many municipalities and states charge a sales tax on energy purchases. Sales tax exemptions are not available in all areas, but they are available over a wide area. As an example, if your pallet mill has a monthly electricity bill of \$15,000 and a 6% sales tax is being added on to the bill, you are paying an extra \$10,800 annually in sales tax. What if you could obtain an exemption from paying this sales tax? In some states, you might also be due a sales tax refund that could range from 12 to 48 months. If your mill is in a state where there was a 48 month statute of limitation for the sales tax refund, you might be able to recover \$43,200 in this example.

### Utility Rebates

Start your investigation into utility rebates at [www.dsireusa.org](http://www.dsireusa.org). After locating an attractive rebate, check the utility's website to confirm that it is still available. Many electricity utilities, such as Dominion Virginia Power (DVP), have Energy Conservation Programs that may benefit the customer. Three of the current DVP programs that may benefit commercial and industrial accounts include:

- **Energy Audit** - Financial incentives are available that help cover a portion of the cost of the audit, up to the full price

of the audit, after completing some of the recommended improvements.

- **Duct Testing & Sealing** – Customers can receive rebates by having duct and air distribution systems in their existing buildings tested and sealed by a participating contractor using program-approved methods. This program has the potential for significant energy cost savings. It is estimated that the rebate would cover most of the cost to test and seal the HVAC ducts.

- **Distributed Generation** - The DVP Commercial Distributed Generation Program will pay participating customers an incentive to reduce their consumption of electricity from DVP during a limited number of hours each year when electrical demand is high. Supplemental power would be provided by backup generators located at the customer's facility during these periods. If backup generation is currently installed at the customer's building **or** if the company is planning to install backup generation, it might be eligible to participate in Dominion's Commercial Distributed Generation Program. This is a great opportunity for the customer if it has an existing generator.

### Utility Contract

The first thing a company will want to look at is its contract with the power company. This contract typically contains terms of agreement, description of services, effective date, rate schedule, contract minimum demand and description of any extra charges. All of these terms sound boring unless you are an attorney or purchasing agent. If you are planning to build a new pallet or lumber facility, all of these items should be understood. Since you most likely have already signed a contract with the electric utility, let's discuss the contract minimum demand and the description of any extra charges.

A contract minimum demand (CMD) is typically set when the utility determines the size of the transformer needed at your mill. This results in a minimum charge even if there is no electrical usage. If your electric needs have reduced dramatically and equipment has been removed, you might be able to negotiate a lower minimum demand with the utility. This may result in a smaller transformer being installed by the utility. Why have

a larger transformer than you need?

It is important to be aware of actions that trigger extra charges. A description of extra charges, such as facilities charges, may be included in your contract with the utility. Why would a utility include extra charges when they are already charging you for the electricity consumption?

Electric utilities typically include a charge known as a facilities charge when a customer asks for service that is in excess of what is normal. As an example, if you want an alternate electric feed for reliability, underground service or a larger transformer than needed, there may be extra charges. How can you reduce these extra charges?

The first step is to determine if these excess services are still needed. The utility may want to charge you for removal of the excess equipment, but it may be worthwhile over the long term. Another idea is to determine if your electrical load has grown and if the excess transformer capacity is still excess. There might be a savings simply by contacting the utility and requesting an adjustment due to the change in electrical consumption.

### **Metering**

Electric utility revenue meters are usually located on the customer side of the transformers. If the revenue meter is located on the utility side of the transformer, there may be a discount due to transformer losses. Another potential advantage to primary metering, if the customer has multiple meters at its location, is combining all of the meters into one monthly invoice. The utility will most likely want to charge a fee for re-ranging the meter location.

Totalized metering is the combining of multiple revenue meters into one virtual account. In the past, the meters were hardwired into a totalizing meter. Today the multiple meters can be combined virtually at the utility mainframe computer. The primary advantage to meter totalization is the reduction of the demand since most accounts don't hit their daily peak demands at the same time. There may be a fee from the utility for this meter totalization.

Sub-metering is customer-owned metering. This technique will not result in direct savings from the local utility, but

it will provide excellent intelligence to the customer to let it know the energy consumption of specific areas within its business. This is important if you want to know the energy used, for example, by the nailer or other specific piece of equipment or area of operation.

### **Billing Errors**

Are there billing errors on your monthly billing statement from the utility? It is possible, but is it likely? Common causes for billing errors include: metering errors, calculation errors especially if the bill was done by a human versus a computer, use of outdated rate schedules, and miscommunication between internal groups and the billing department. Utility bill tracking software packages, such as EnergyCAP Express, are great ways to monitor your energy consumption and costs so that you can detect billing errors.

### **Demand Response**

Demand response, also known as load response, is end-use customers reducing their use of electricity in response to power grid needs. Organizations, such as PJM, a regional transmission organization (RTO) that coordinates the movement of wholesale electricity in all or parts of 13 states and the District of Columbia, pay end-use customers to reduce their electric load during an emergency event by curtailing load or shifting load to a generator. End-use customers participate in demand response through PJM members called curtailment service providers (CSPs), who act as agents for the customers. Payment made to the end-use customers by the CSPs varies from year to year.

### **Operational Changes**

There are three primary operational techniques that you can use to reduce energy costs.

1. Shift load to off-peak periods when electricity costs are reduced. Off-peak periods are usually nights and weekends.

2. Turn off unused equipment. For example, put a timer on your air compressor to make sure it is turned off at night. Turn off equipment during lunch time.

3. Install more efficient equipment. The easiest area to target is lighting. Installation of more efficient lighting

results in immediate cost savings. Many utilities offer rebates for more efficient lighting. LED lighting should also be considered. The price of a LED lamp is more expensive but the life time cost is reduced due to its extended life and less labor needed for replacement. Installation of more efficient motors and pumps can also provide a quick payback.

### **Networking**


Do you attend national trade organization meetings or meet with other pallet mill personnel in your area? Networking with your peers is a great way to learn how others are identifying low-cost/no-cost methods of energy cost reduction. Your local electric utility and energy consultants, such as eDiscoveri, [www.eDiscoveri.com](http://www.eDiscoveri.com), are other excellent resources.

### **Walk-Through Energy Audits**

Walk-through energy audits are quick reviews to identify how, where and when energy is used. It involves touring the facility and quickly identifying energy savings opportunities. The basic energy management techniques used include: reducing equipment runtime, using more efficient equipment and shifting load to off-peak periods.

### **Will These Suggestions Work for You?**

Has my article given you some low-cost/no-cost ideas to reduce energy costs at your pallet mill? I hope the answer is yes. The top three methods that require little to no cost to reduce energy costs are rate schedule change, sales tax exemptions and electric utility rebates.

Using these three methods may result in a significant energy cost savings for your pallet mill. eDiscoveri is prepared to help you identify the low-cost/no-cost methods of energy cost savings. Please let me know if we can help and if you have any questions. 

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