

Ergs, Joules & Such

Notes on Energy Savings for the Rural Water Community and Maybe Others

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The last couple of months we've been talking about electric bills and the useful information that can be gleaned from them. We'll probably come back to these bills, but we need to spend some time on the silent partner of the bills; namely, the electric rate structures that determine how electric use is priced out. Unfortunately, these structures or tariffs as they are sometimes called aren't fun reading, frequently being complicated and legalistic. Nonetheless, if you hope to be successful in reducing your electric costs you need to have a general familiarity with them. By the way, pieces of this will be familiar from past issues, but we need to bring it all together. These rate structures are normally readily available from your power supplier and are usually posted on their web site.

- Lets start with some general stuff. A common characteristic of all these rates for commercial customers (power suppliers divide their rates into commercial and residential classes and sometimes special use classes) is some provision for charging for the electric capacity – usually called demand -- required at that location and some provision for charging for the amount of time electricity is used at some capacity level – often referred to as energy. Capacity in the amounts we deal with is measured in kilowatts (kW) and energy used in kilowatt-hours (kWh).
- There are about as many variations in commercial rate structures as there are power suppliers but we can make some generalizations. Lets take demand first. It is usually the first part of the rate description and will be a dollar amount per kW.
- An informal survey of US power suppliers indicated a variation in these amounts from less than \$1.00/kW to almost \$20.00 /kW with an average of \$7.50/kW. After the basic dollar charge per kW, many of the rates will specify minimums that the demand can never fall below – typically some percentage of the maximum established during high use months from June to October and/or some percentage of the amount contracted for at that location.
- The next piece of the rate structure is usually a procedure for pricing kilowatt-hours. This can

either be a fixed rate or frequently, it's a stepped rate dependent on various factors. For the fixed rate schedules, the aforementioned survey found a range of prices from less than one cent to over 12 cents per kilowatt-hour with an average of 4.66 cents/kilowatt-hour.

- The most frequent stepped kWh rates are those where the charge per kWh drops at some number of kWh that is either fixed or determined by the demand and those where the kWh charge is lower when the power is used at off-peak times, usually nights, weekends and holidays. These are called Time-of-Use (TOU) rates.
- This is dry, dry stuff I know, so we'll quit for now and leave some for next month. As a reward for your perseverance, here's a contribution from our intrepid Loco CEO..... "My neighbor in Loco planted a light bulb and thought he would get a power plant."..... Loco is truly blessed!!