



Energy Center

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How To Analyze and Understand Your Electric Bill

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by

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GLOSSARY

•Kilowatt (kW)

Is the measure of electrical capacity required by the customer at any instantaneous moment. The kW equates to power or force. One kilowatt equals 1000 watts. One megawatt (mW) equals 1000 kW.

The instantaneous demand, or draw on the system, is sometimes referred to as the “load”.

E.g., compare - at an instantaneous moment - a 40 watt light bulb to a 250 watt light bulb.



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GLOSSARY (Cont'd)

Kilowatt Hour (kWh)

Is the measure of electrical energy. It represents the duration of a kW overtime. A kWh is defined as work, and work is force times the distance through which it acts.

A simplistic example may be a comparison to an automobile:

kW is analogous to the speed of the car - and -
kWh is analogous to the distance the car has traveled

the speedometer “meters the kW”
the odometer “meters the kWh”

Another example is a 200 watt light bulb (instantaneous demand) is run for 10 hours (period of time) for a total electrical energy usage of:

(200 watts) X (10 hours) or 2,000 watt-hours
or two kilowatt-hours (kWh)

1000 kWh equals one megawatt-hour (mWh)



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GLOSSARY (Cont'd)

•Load Curve

A summary of total energy use as well as the pattern of that use through a particular period of time (i.e., through the “cycle”). Typically, these can be daily load curves (cycle runs for 24 hours) or annual load curves (cycle runs for 8760 hours).

•Average Load

The total kWh of energy used through the cycle divided by the total hours in the cycle.

E.g., if I use 720 kWh in one day then my average load (for the day) is 30 kW.

•Peak Load

Maximum instantaneous load. Like with average load, peak load is measured in kW (or mW).



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GLOSSARY (Cont'd)

•Coincidental Peak (CP) Load

A customer's instantaneous kW demand at the moment the utility's total system experiences its peak.

•Non-Coincidental (NCP) Peak Load

A customer's maximum instantaneous kW demand irrespective of when it happens.



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GLOSSARY (Cont'd)

•Load Factor (LF)

$$\text{LF} = (\text{average load}) / (\text{peak load})$$

or

$$\text{LF} = (\text{kWh}) / (\text{peak load}) \times (\text{total hours})$$

where (peak load) X (total hours) = what the kWh usage would be if, at all times during the cycle, the load equaled the peak.

LF is a number between zero and one (a percentage).



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GLOSSARY (Cont'd)

•Load Factor (LF)

E.g., Suppose a customer uses 720 kWh during a day and during the day that customer's instantaneous demand peaks at 50 kW.

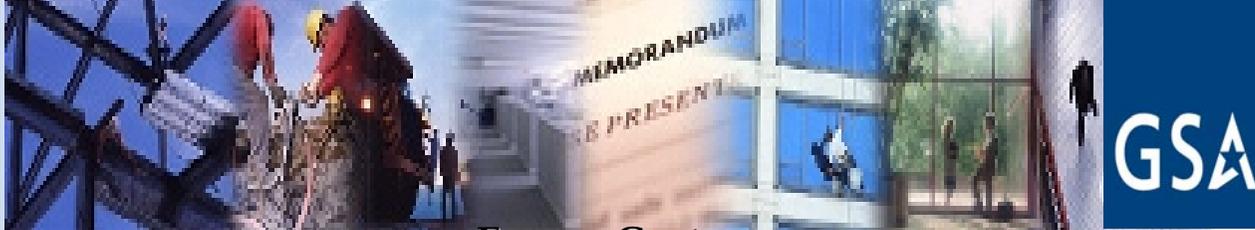
total energy use =	720 kWh
total hours =	24
average load =	30 kW
peak load =	50 kW
(peak load) X (total hours) =	1,200 kWh

$$\text{LF} = (30 \text{ kW}) / (50 \text{ kW}) = .6 (60\%)$$

or

$$\text{LF} = (720 \text{ kWh}) / (1,200 \text{ kWh}) = .6 (60\%)$$

$$\text{"Unused Capacity"} = 1,200 - 720 = 480 \text{ kWh}$$



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TYPES OF RATES

1. Flat Rate - Two Part Rate
2. Declining Multiple Block Rate
3. Inclining Multiple Block Rate
4. Interruptible Rate
5. Time of Use Rate (Time of Day)
6. Load Factor Rate
7. Multiple Demand Block
8. Seasonal Rate
9. Load Retention Rate
10. Market Based Rate
11. Unbundled Rate
12. Marginal Rate



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How to Take Advantage of Rate Choices





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RATE CHOICES

- **Make certain the size of your connected load (both demand and energy) fit within the allowable parameters of the applied rate.**
- **Verify any changes involving additions or deletions in either space or usage for the prior and subsequent 12 months. Make certain they do not impact the parameters of your current rate.**
- **If the above changes are substantial, contact the utility to confirm the availability of another rate.**
- **Calculate other rates, i.e., time-of use, load factor, etc. and compare with your current rate charges.**
- **If you have self generation, revisit and compare the costs and probability of taking interruptible service and self-generating during peak periods, verses the current rate.**
- **MAKE CERTAIN BILLS ARE VERIFIED, APPROVED and PAID WITHIN THE DUE DATE.**
- **Since reliability is a key factor in government service, make certain rate decisions are not made exclusively based upon costs, but upon a combination of cost plus reliability.**



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SUMMARY

- 1. Verify changes in rate: increase or decrease approved by PUC**
- 2. Verify changes in usage or facilities**
- 3. Calculate rate and compare with bill**
- 4. Contact utility company with any discrepancies**
- 5. Authorize payment within the allowed due date: (no penalty)**
- 6. If you still have questions, please contact me @**

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