

# Submetering ||

## Overview

Within the selected group of marinas, this study tracked both submetered and unmetered facilities under a variety of conditions in an effort to determine if submetering is a significant factor in electrical power consumption. The study did not monitor whether or not these submeters were *read* or if an appropriate charge for kilowatt hour use was passed on to the slip owner/lessee/renter. Most of the facilities seemed to use a very loose system for monitoring their submeters, calculating charges for kilowatt use and record keeping. These methods of operation may reflect attitudes developed prior to 1993 legislation (Bill #AB 2108, signed into law on October 10, 1993) specifically allowing public marinas to submeter. *For the full content of this bill, see Appendix D: Assembly Bill No. 2108, page 170.*

## Analysis

Presently, the rules and regulations dictated by the California Public Utilities Commission (CPUC) are very specific regarding rates to be charged for kilowatt hour use of electricity by boaters. Strict adherence to these rules/laws is not only mandatory, but will also contribute significantly toward offsetting a major marina operating cost and possibly realize a small profit for the facility. More importantly, compliance will clearly and significantly reduce electrical use, thus conserving energy. Submetering will also result in a decrease in fire hazards by encouraging slip occupants to unplug or



shut off unattended heaters, lights, air conditioners, refrigerators, battery chargers and so forth, in an attempt to keep their monthly costs to a minimum.

One studied facility offered a unique opportunity to investigate the actual benefits of submetering. Not only did the facility have submetered and unmetered slips in separate areas, but separate utility company meters for each. Over a period of one year, the two areas had nearly 100% occupancy and were monitored using the separate utility company meters. The difference in electrical usage was significant. *The unmetered area containing only 144 recreational slips used 246% more electricity than the submetered area containing 228 commercial slips!*

Installation of electric kilowatt hour submeters has several advantages to a facility owner. While initial cost is high (\$150-\$250 per slip), a realistic return on investment has been clearly demonstrated. An owner can expect an immediate reduction of 30%-50% in his electrical utility bill for the slips. For a new facility, initial costs are slightly less since submeters will already be installed in the marina outlet (power post/mini center). *For more information on this topic, see the Marina Outlets section, page 147.* In addition, a new facility will have lower initial operating costs because the submeters are already in place.

Further, as part of the rate, a small surcharge is imposed in addition to the kilowatt hours billed (similar to the "meter charge" one sees on home utility bills). This is intended to cover monthly costs such as meter reading, billing correlation and maintenance of the electrical system. If an owner includes the monthly meter reading and electrical charges with his monthly slip rental bill, these fee



costs can be kept to a minimum and potentially realize a small profit. *For a sample utility company rate sheet, see Appendix F: PG&E Rate Schedule, page 173.*

These surcharges and kilowatt hourly rates are set by the CPUC and are not merely suggested charges and rates. The industry is closely regulated; if you submeter and bill the public for kilowatt hours used, you must strictly adhere to these regulations. It is not permissible to arbitrarily charge either less than or more than the local utility company would charge for the same class of service for kilowatt hour use. Utility companies have many different classes of rates, such as *primary resident, industrial, agricultural* and *time of use*. The rate the facility is required to charge the boater will undoubtedly be different than the rate the utility company itself charges the marina. The marina owner/manager/harbor master must contact the CPUC to obtain the proper rate and the appropriate rules and regulations.

More importantly, electric submeters are also well known as the best energy conserving tools available in the market today. This is especially true for facilities that have a live-aboard contingent. More and more large electrical utility users such as public marinas are under close scrutiny to insure that they are making every effort to conserve energy.

In addition to the above, each marina owner/manager/harbor master needs to review their own facility's utility company bills and the rates they are currently being charged. The major utility companies are generally very helpful in reviewing individual customer's rates on a regular basis to ensure the customer is being billed at the best (least expensive) rate available for their application.



Many marinas have multiple utility service points, and a rate that works well at one service point may not work as well at another. Marinas, for example, generally work well under a *time of use* rate. However, if the electric meter that serves the marina also services a restaurant with large lunch and early dinner clientele, this may not be feasible. The local utility company representative for the facility should be contacted and asked to provide a rate structure analysis to identify potential areas of savings.

Another potential application of submetering highlighted by their effect on actual electrical use is the following scenario. An older, unmetered facility's existing electrical distribution system is beginning to feel the effects of increased use by newer, more electrically demanding boats, and circuit breakers are being tripped in various areas of the marina with increasing frequency. Installing submeters offers an efficient solution to this problem by quickly and radically reducing demand. The graphs that follow clearly demonstrate that submeters reduce the average Highest Recorded Peak (HRP) by nearly half, a reduction that will add years to the life of the existing electrical system.