

## Demand/Energy Charges

**Should the demand charge be increased (and the energy charge decreased) to recover more of our costs through the demand charge?**

### Background

Medium, Large and High Demand General Service rate schedules include demand charges as well as energy charges. Energy charges relate to the continuous flow of energy measured in kilowatt-hours (kWh), while demand charges relate to the highest energy consumption (the “peak”) during a month. Demand is billed in kilowatts (kW).

At present, peak demand charges for Large and High Demand General Service rate schedules are set to recover transformer costs and half the cost of transformer losses. The off-peak demand charge is set equal to the transformer investment discount rate, which is much lower, and is only assessed on demand greater than the maximum during the peak period. The peak period is 6 a.m.-10 p.m. Monday-Saturday. Since these customers have time-of-use rates, the cost of energy during high-cost periods is recovered in the peak energy rate, while the cost of energy during lower-cost periods is recovered in the off-peak energy rate. Their demand charges are:

	Large non-network	Large network	High Demand
Per peak kW	\$.40	\$.84	\$.40
Per offpeak kW	\$.17	\$.17	\$.17

Demand charges for Medium General Service customers are set following the above cost principles with regard to transformers, but in addition they partially cover the cost of energy during high-cost periods, because these customers have flat energy rates that do not differentiate between high-cost and low-cost (time-of-use) periods. Their demand charges are:

	Medium non-network	Medium network
All peak kW	\$1.03	\$1.59

City Light’s demand charges are much lower than the demand charges of other utilities. It has been suggested that demand charges be set at higher levels to recover more of City Light’s capacity costs from the demand charge, rather than from the energy charge. Such higher demand charges might recover some or all of the costs of distribution substations and wires, for example. Since City Light is entering a time period in which it foresees a need to build new substations, add wires, etc., to meet increased customer capacity needs, higher demand charges might cause some customers to reduce their demand, either planned or actual, on the distribution system, thereby allowing City Light to avoid building, postpone or reduce the size (and cost) of some new substations and other additions. Rate schedules with higher demand charges might also be considered fairer than those currently in effect because it can be argued that customers who impose capacity costs on the City Light system should pay for them in demand rates which

reflect their capacity requirement. City Light must have the capacity they need ready for their use, even if they consume energy near their highest requirement relatively seldom.

City Light's relatively low demand charges reflect the fact that City Light's hydro generating resources face energy constraints, rather than capacity constraints. The Department's hydro resources can handle all but the most extreme levels of peak demand without difficulty, but the amount of energy that can be produced is limited by the amount of water available. In order to provide incentives to conserve on energy use, the City has set energy charges at high levels relative to its demand charges. However, in recent years concerns about capacity constraints in the distribution system have led the Department to consider whether a stronger incentive to reduce peak consumption should be sent through a higher demand charge.

Increasing demand charges will not increase City Light revenues, as revenues are constrained by the revenue requirement. Within a given class revenue requirement, if demand charges are increased, energy charges must decrease (or increase less). The real effect is an exchange of the burden of bill payment among customers in a class. Customers with low load factors (low normal demand relative to their highest instantaneous demand), whose demand charges are a large component of their bills, will experience high bill increases. Customers with high load factors (whose average demand is very close to their highest demand) will experience bill decreases. Customers with average load factors will experience little or no bill effect.

**Alternatives:**

1. Keep demand charges at or near current levels, recovering the same costs included in current rates.
2. Increase demand charges significantly to cover more of the costs of the distribution system.
3. Calculate demand charges that would cover more of the costs of the distribution system but move toward implementation of those charges gradually, over several rate change periods, to mitigate extreme bill effects.