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Why property owners should care about utility demand charges - by John Mosher

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Energy storage systems, also called battery systems, are increasingly popular with property owners and tenants for three reasons:

• They provide some emergency backup electricity during power outages.

• They allow businesses to use stored solar electricity instead of buying expensive utility electricity when prices are at a premium.

• They reduce utility “demand charges” and thereby further reduce a company’s electricity overhead.

That last benefit is the least understood of the three, but can easily be worth thousands of dollars to real estate companies that occupy their properties, or to tenants who are responsible for paying energy costs.

Demand Charges Explained
To understand how energy storage can reduce demand charges, and how that lowers electric bills, one must understand the concept of a demand charge.

Businesses pay the utility for power in two ways. First, they pay for the electricity they consume (measured in kilowatt-hours). Second, they pay a demand charge for their “portion” of the entire utility infrastructure required to meet the grid’s peak demand.

Each month, the utility continuously monitors how much power most of its commercial customers draw from the grid at any given time. Whichever fifteen-minute period represents the customer’s highest demand for electricity from the grid determines the demand charge rate for that entire billing cycle.

Two businesses could consume the same amount of electricity in a month but owe different

amounts on their bills, because one has relatively consistent demand throughout the day while the other has dramatic jumps in demand at certain times of the day.

For most businesses, demand charges comprise 30 to 70% of the monthly electric bill.

How Storage Reduces Demand Charges

Energy storage systems give companies a way to reduce their peak demand and save money.

The concept is as simple as demand charges are confusing. Remember the 15-minute period that determines a company's demand charge rate for the entire month? If that company uses less utility energy during those peak times, replacing it with stored energy, they have lowered their peak demand for the entire month, and that lowers their electric bill.

Utilities often call this "peak demand shaving" but that implies a small reduction. In reality, "slashing" or "lopping off" is probably a more accurate term.

Storage + Solar Adds Up

Adding storage to a solar energy system adds even more value to the equation, since solar also lowers commercial electric bills. The same variety of financing methods available for solar energy systems apply to solar energy storage systems. Businesses can reap the rewards of battery storage without investing any capital. And like solar energy, storage typically pays for itself within a matter of years.

Today's batteries typically last 10 years or more before their capacity starts to significantly degrade. The long-term nature of a solar+storage investment, therefore, makes the most sense for owner-occupied buildings or tenants with long-term leases.

A full-service energy management partner can monitor the storage system's performance, and enroll the battery into utility or energy market programs like demand response, which can generate significant revenue in addition to the demand charge savings.

All of these storage benefits are on top of the benefits a solar energy system delivers on its own (reduced electric bills, green income and tax benefits). Plus, batteries charged by solar qualify for the same lucrative investment tax credit that has driven so much investment into solar energy. So an energy storage system is essentially a tool to get you even more bang for your solar buck, while helping you achieve more independence from the utility.

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