

Capacitors – Is Bigger Better?

A bad power factor will make your utility bills rise and can cause false loading on the entire network. The common fix for this situation is a centralized automated capacitor bank, sized big enough so you don't worry about what's causing the situation. **But is this the best solution?**

The root of the problem is the equipment connected to the system. Equipment may have been improperly designed (oversized) for your building, or the operating conditions may have drifted over the years. An oversized central capacitor bank will lead to additional costs, from installation to maintenance to faulty operation when it ages, resulting in a **higher than necessary current consumption from the grid.**

Performance and efficiency begin at the design phase, ensuring from the start that chillers, heat pumps and ventilation are up to date, are the right size, and work properly together. Once the system has been constructed, running a power audit will determine your draw and whether you genuinely need a capacitor bank. If you modify the systems to achieve the desired design conditions, you will solve most of the problem. This is usually done through motor replacement, resizing pulleys and belts, variable frequency drives, optimized control sequences for chillers, fixed capacitors for specific equipment, etc. You will end up with less equipment, thus fewer maintenance costs. And you'll still avoid incurring penalties for unused current.

Fixing the source rather than the symptom delivers efficiency, high performance and cost-effectiveness. **It is one of many benefits of practicing Integrated Engineering and Construction as part of an Outcome-Based Contracting approach to deep energy retrofits.**

A properly sized capacitor will not use more energy than necessary from the grid.

To learn more:



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