Power TakeOff

COMMERCIAL OFFICE COMPLEX

A 653,000-square-foot Class A office complex includes a 10-story building with an attached 28-story tower, a two-story lobby, ground-floor retail, and fitness and conference amenities. The building's large footprint, mixed uses, and extended operating hours created a complex load profile with high baseline energy consumption.

Through participation in Power TakeOff's Virtual Strategic Energy Management® (vSEM®) program, the site reduced electricity use by 6,022,569 kWh, avoiding $1,072,879 in annual energy costs. These savings were realized entirely through operational and building automation system (BAS) controls improvements, without capital investment.

The Opportunity

Initial analysis of interval electricity data and BAS analytics revealed that key HVAC systems were operating above the required occupancy level. Multifloor systems were running 24/7, air handlers and chillers were interlocked in ways that drove unnecessary runtime, and condenser water return setpoints did not reflect actual load or occupancy patterns. These control issues led to excessive overnight and weekend consumption and an elevated energy baseline that did not align with the building's actual operational needs.

The building's size, multiple use types, and extended operating hours complicated scheduling and cross-system coordination. Maintaining tenant comfort in a Class A office environment remained a priority, requiring changes that could be implemented via controls rather than disruptive capital projects.

$1,072,879 Avoided Annually

6,022,569 kWh Saved

44% Lower Annual Electricity Use

The Action Plan

Participation in Power TakeOff's vSEM program focused on translating data insights into targeted operational changes and BAS optimization. Over the course of the engagement, the following strategies were implemented:

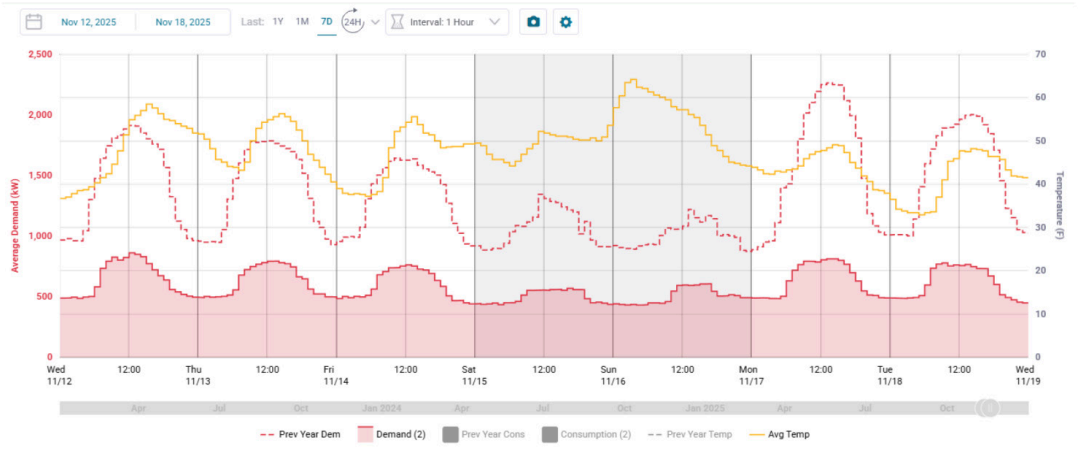
- Collaboration between Power TakeOff's energy coaches and facility staff to review interval meter trends and BAS configurations, isolating patterns of unnecessary equipment operation and control conflicts.
- Reprogramming multifloor HVAC systems to eliminate 24/7 operation and align start/stop times with actual occupancy, reducing after-hours and weekend runtime while maintaining comfort.
- Adjusting interlocks between HVACs, air handlers, and chillers so central plant equipment operated only when zone-level demand warranted, reducing unnecessary runtime.
- Optimizing condenser water return setpoints to reflect real-time load conditions, improving overall central plant efficiency.
- Regular check-ins with the facility team to review performance data, refine control strategies, and maintain open communication with operations and management stakeholders.

During a major multifloor plumbing failure event, the vSEM team supported the customer by closely monitoring energy data, flagging anomalous air handler and chiller behavior, and recommending temporary adjustments that balanced reliability and efficiency. Beyond technical measures, the engagement supported the development of an energy management policy and stakeholder engagement plan, clarifying roles, expectations, and communication protocols across operations, engineering, and management teams.

The Outcome

The building experienced measurable and sustained improvements in energy efficiency:

- **6,022,569 kWh** annual energy reduction
- **$1,072,879** in avoided yearly energy costs (44% reduction in overall electricity use)
- Reduced equipment wear and more stable comfort conditions
- Lower peak demand, reducing strain on the local grid
- Durable framework for continuous energy performance improvement through ongoing monitoring and recurring check-ins with facility staff, enabling early detection of operational drift



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