

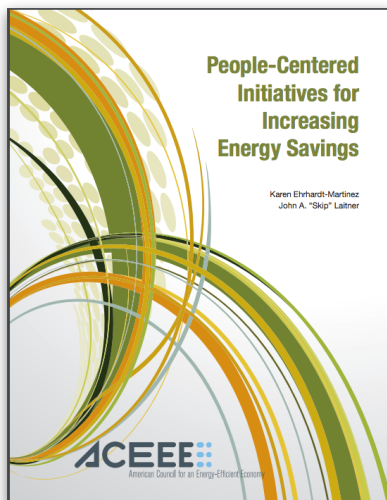
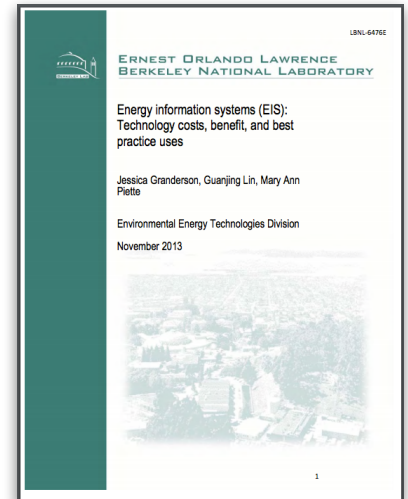
Energy Information Management Systems Expected Savings and Supporting Research

Energy Information Systems like BuildingOS is the key component to a **median of 17% site energy savings**.

[Lawrence Berkeley National Lab researched Lucid](http://eis.lbl.gov/pubs/lbnl-6476e.pdf) as one of a dozen companies in a study and found that “Energy Information Systems were cited as a critical component in achieving 17 percent median site savings, and 8 percent median portfolio savings; these energy savings were calculated to represent approximately \$56,000 and \$1.3 million in utility cost savings. Here is a link to the research paper by Lawrence Berkeley National Labs - <http://eis.lbl.gov/pubs/lbnl-6476e.pdf>

Below is a list of areas, where Lucid’s BuildingOS can provide energy savings:

- **2-4% energy reduction via Scheduling tool** - Scheduling, or optimizing building energy use for unoccupied hours such as nights, weekends, or holidays, is an oftentimes overlooked and no-cost way to save money. With real-time data, Lucid’s Heat Map Analysis tool shows you how much electricity your buildings are using 24/7/365, giving you the tools to visually compare weekday consumption to weekend consumption, daytime to nighttime loads, and other non-occupied or partially occupied times of day like holidays. Smart Start-Up and Coasting goes one step beyond Setbacks to optimize building energy consumption during occupied periods. With real-time data and Lucid’s Heat Map Analysis and Load Profile Analysis tool, you can overlay your HVAC electricity consumption over your total building’s energy consumption and daily average temperature data to identify the optimal time your building’s HVAC equipment and BMS should be coming on and dialing back as building occupants begin to head home.



[A report by the ACEEE](#) found that behavioral efficiency gains can reduce energy by up to 25%.

- **5-8% Savings via Behavioral Efficiency Changes** - benchmarking can cut energy use by an average of 7%, just by making owners more aware of how the building is performing and pointing out anomalies that need to be corrected. These factors come into play for behavioral efficiency changes: Real-time feedback creates motivation for action when the result is seen instantaneously by the user. Public Commitments employ social pressure to guide people towards completing their commitment.

Peer Comparison / Normative Comparisons are empirically proven to motivate people to change their behavior towards what is considered the 'norm.' Empathetic Gauges are storytelling instruments that establish an emotional connection.

- **1-2% Savings via Bill Reconciliation/Bill Auditing** - Bill Reconciliation can deliver significant savings with a simple verification against your utility bill. Using your own billing data or an automated monthly bill service, Lucid's Bill Analysis tool can quickly and easily compare the utility meter's billed consumption and your sub-meters reported consumption for all the buildings in your portfolio.
- **2-3% Savings via the Portfolio Drift Analytics Application** - Detecting deviations in building consumption, baseload or peak load over time. Portfolio Drift is an energy management term used to describe the increase over time that inevitably occurs in normalized energy consumption. What are the potential savings: New buildings drift 10-30% on average from their commissioned energy use in the first 2 years of occupancy (Research from LBNL). 4-18% of all energy used in buildings is due to faults - things like leaving lights on when a building isn't occupied have a significant impact on energy use. Up to 65% of power use from plugged-in devices is wasted (Research from the IEA).

3-8% Reduction via Peak Demand Shaving using Alerts - Peak Demand tariffs on your electricity bill may be as high as 40% of commercial building energy spend.

- **Potential Savings:** If you reduce peak demand by 25%, you can save on average 10% off your total energy bill, and if you reduce peak demand by 50%, that's 20% savings off your entire energy bill. In less than 5 minutes you can set up Alerts within Lucid's BuildingOS to notify you by email when you have hit your peak consumption and or when your consumption is going over a peak demand threshold as set by your team. Lucid's Load Profile Analysis tool can be used to analyze your historical consumption patterns to develop building appropriate thresholds.

Using Lucid's Comparisons tool allows you to identify areas of potential peak energy demand savings are by showing you which of your electrical loads is consuming the most.

Time Savings - Labor Cost



In addition to the energy savings listed above, there are also productivity gains, by reducing manual data entry, consolidating disparate data sources and automated reporting. In some organizations, data collection, entering and analysis requires a dedicated full time employee. For true ROI calculation for your organization, make sure to include the labor cost for any employee currently involved in energy data tracking and analysis efforts.