

Energy Efficiency 101

Energy efficiency consists of any physical, operational, behavioral, or maintenance modification to a building that reduces its energy consumption and costs. Energy efficiency can be a tremendous financial opportunity for organizations. Consider the following:

- Commercial and residential **buildings consume 35 to 40% of energy** worldwide. [\[Navigant\]](#)
- The average facility **wastes 30%** of the energy it consumes. [\[US DOE\]](#)
- American businesses can **save \$169 billion in energy** by 2030 through identifying and installing energy conservation measures. [\[ASE\]](#)

Energy Conservation Measures [ECMs]

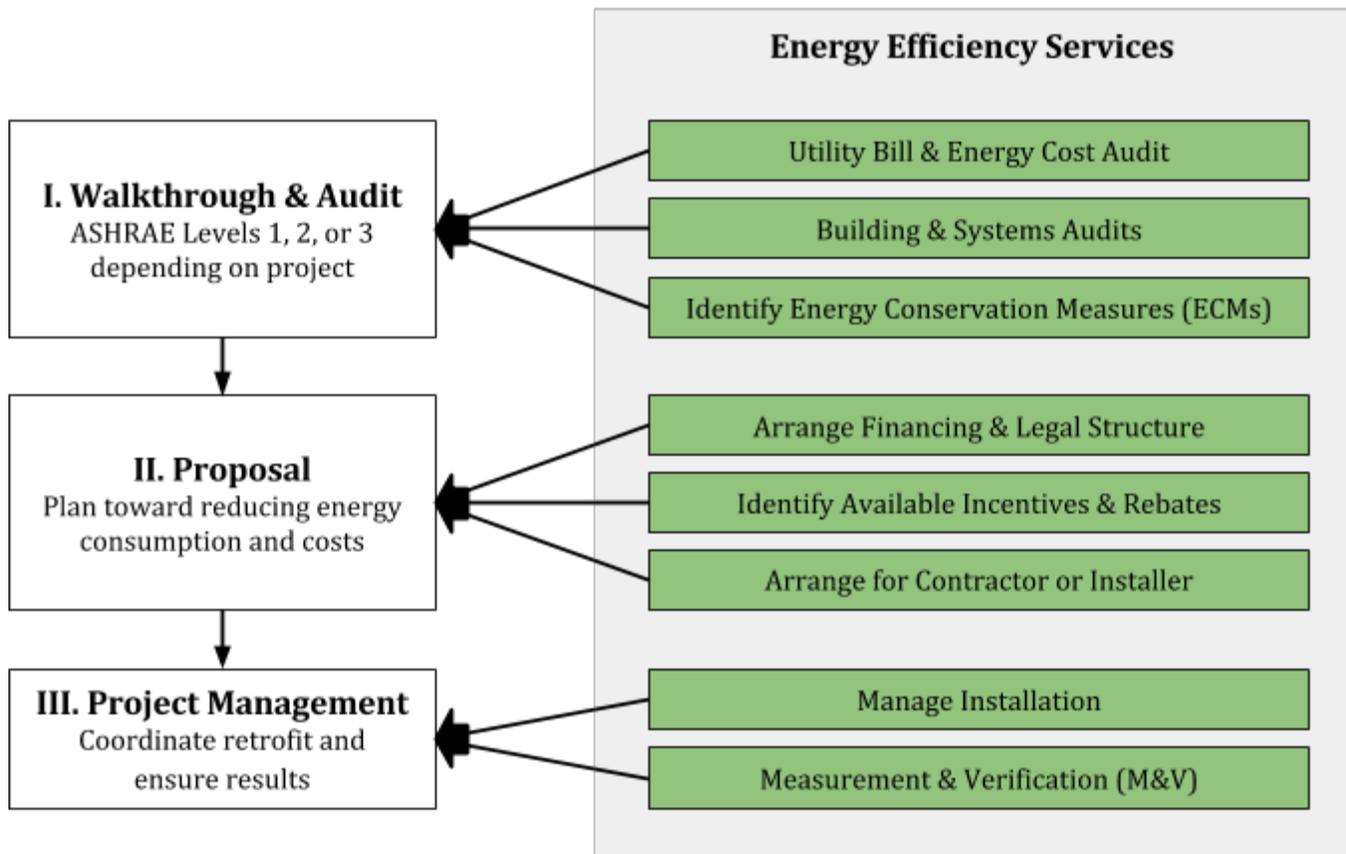
Facility owners and managers can realize energy and cost savings throughout a facility. While specific payback and NPV for any ECM depends on the unique aspects of each facility, some ECMs are typically better investments than others. Below is a chart of common ECMs and financial ROI.

ECM	Examples	ROI
Lighting	LED, CFL, electronic ballasts	Excellent
Variable Frequency Drives (VFDs)	Pumps, fans, air handlers, other electric motors	Excellent
Demand Response	Daylighting, set point modification, load shifting	Excellent
Heating & Cooling	Boiler, chiller, & rooftop upgrades; CHP systems	Good
Building Management Systems (BMS)	Sensors & controls, software, automation	Good
Envelope	Air sealing, insulation, EIFS, green roof	Good
Plug load	Behavior modification, Smart Plugs	Fair

The above list is not all-encompassing, but represents ECMs that are typically smart investments across a wide variety of building types and locations. Other ECMs may be available depending on the facility. Renewable energy such as solar and wind are not included because they are not ECMs; however, Third Partners uses a similar process to manage renewable energy projects.

Energy Efficiency Project Plan

There are many considerations in successfully implementing energy efficiency projects. Third Partners provides all the necessary services to maximize energy savings and ROI.



Key financial considerations for an energy efficiency project

➤ Energy Costs

The higher the **cost of energy** per therm or kWh, the better the NPV and ROI: when costs double, ROI doubles and payback period is reduced by half. Historical energy costs are useful in predicting financial performance, but also do not consider future fluctuations in global energy supply and demand. Reducing energy consumption through energy efficiency helps insulate organizations from these cost fluctuations.

➤ Energy Savings Potential

The higher the **projected energy savings**, the better the NPV and ROI. Significant energy waste occurs frequently with equipment designed decades ago when energy costs were lower, or equipment that is used beyond its planned life. New designs can produce significant savings over currently installed equipment.

➤ Financing Requirements

An organization that funds its own energy efficiency projects is usually subject to its own **cost of capital or requirements on financial return** which may be used to prequalify ECMs. For projects not funded within an organization, Third Partners implements energy efficiency projects with third-party financing.

➤ Incentives and Rebates

Many states, municipalities, and utilities offer significant **incentives and rebates** to organizations that implement ECMs. Incentives can significantly improve the financial ROI of a given ECM, and turn a project from financially infeasible to a great investment. Third Partners works to identify all such opportunities.