



Hancock Software White Paper

Energy Audits and Beyond

*Integrated Energy Conservation Program Management
for Utilities and ESCOs*

John McArthur

President, Walden Technology Partners, Inc.

Energy Audits and Beyond

Overview

Through advanced integrated program management, utilities market players can gain significant operational efficiencies, and consumers and utilities can gain substantial energy efficiency and cost savings.

The energy audit report, which identifies energy reduction strategies, begins the energy conservation program management lifecycle. In advanced integrated program management systems, audit reports can now be delivered to the homeowner at the point and time of audit. Audit reports delivered this way are dramatically more effective at converting prospects to customers than audit reports that are not delivered at time and place of audit.

Once an energy conservation project is underway, comprehensive program management systems provide visibility and accountability into utilities' and Energy Services Companies' (ESCOs) program activities and offer a means of measuring increased operational efficiencies. Transparency and accountability can ensure that the utility's energy conservation programs are constantly improving and meeting audit requirements by delivering the maximum potential energy savings to the homeowner and program compliance for utility companies.

Energy Audits and Conservation Programs - Current Situation

Energy conservation programs are of growing importance to utilities and ESCOs in the United States, whether conservation measures are government mandated or initiated otherwise. Utilities may be mandated to pursue energy conservation programs, however many utilities also have a larger economic motivation: reducing per-household energy consumption while meeting customer demand and avoiding construction of additional, very costly power generation facilities.

At any given time, a utility may be pursuing tens of energy conservation programs, ranging from the replacement of aging appliances, to upgrading HVAC systems, to installing insulation and other weatherization measures. Utilities are experts in generating power, distributing power and billing. They are not typically experts in delivering energy conservation measures. And though a utility could operate their own energy conservation programs, most outsource much of the energy program activities to ESCOs.

ESCOs are experts in implementing energy programs. Larger ones may manage multiple energy programs in multiple regions, while smaller ones may focus on a subset or even a single conservation measure within a smaller region. As a result, utilities often contract with multiple ESCOs to deliver their energy programs.

ESCOs rarely have all of the resources and skills needed to operate a complete energy conservation program. ESCOs will typically contract with energy auditors and contractors to augment their own in-house skills and to meet seasonal variations in demand.

Finally, utilities and ESCOs may hire independent inspectors, whose job is to ensure that contracted conservation measures were actually implemented and that the work was properly conducted.

In such a complex delivery system, high degrees of transparency and high levels of accountability are needed to minimize payback time and maximize the efficacy of the energy conservation programs.

Challenges with Today's System

While the delivery system for energy programs is complex, (given the broad range of skills required, variability in demand and geographic areas that must be covered) it is neither likely nor necessarily desirable that the delivery system be simplified. However, the current system has proven to be inefficient and ineffective in delivering the desired outcome: adoption of cost-effective energy conservation programs, which deliver measurable reduction in homeowner energy consumption.

There are eight phases in the lifecycle of an energy program:

1. Marketing
2. Scheduling
3. Audit
4. Identification of Measures
5. Agreement to Measures
6. Implementation of Measures
7. Inspection of Measures
8. Reporting of Measures

The crucial step in converting prospects to customers is the delivery of an accurate audit report to the homeowner. Here is the first opportunity for the energy conservation program to break down. Utilities expend significant resources marketing energy programs and scheduling energy audits. All of these activities and their expense are wasted if energy audits do not result in homeowners' adopting energy conservation measures.

In the current system, most auditors conduct energy audits and record their findings on paper. The paper audits are used to compile a report and a list of recommended measures for the homeowner. Unfortunately, this report is typically prepared at the auditors' offices and not at the homeowners' residence (or other audit site), leading to a delay in delivering the report. Depending on how many systems are used to produce the report, the homeowner data may have to be rekeyed into other systems, introducing potential data entry errors and inaccuracies in the report.

Auditors then mail the report or schedule an in-person visit to discuss the recommended measures. These additional steps create significant delays and fall off of potential customers. Energy audits are wasted expense if they do not result in the implementation of recommended energy measures.

Once the homeowner contracts with the utility, the utility must track and deliver the conservation measures through a complex delivery system. Utilities have limited visibility into the status and effectiveness of their energy programs throughout the system. What information can be gleaned is narrowly focused, incomplete and delivered too late in the process for utilities to identify and eliminate problems in an audit. Most utilities would have a difficult time answering even the most basic program reporting questions such as:

- How many homes were audited in the past month?
- Which measures were recommended?
- Which recommendations have been accepted?
- Which recommendations have been implemented?
- What are the total energy savings that have been achieved?

There is insufficient visibility and oversight in the current system to drive the desired outcome: *adoption of cost-effective energy conservation programs that deliver measurable reduction in homeowner energy consumption.* And, because energy programs are often funded by surcharges on energy bills utilities are coming under increased scrutiny, regulators and lawmakers are demanding that utilities be accountable and demonstrate the effectiveness of their energy programs.

Audit and Program Management Systems for Today Increasing Energy Audit Customer Conversions

The energy program lifespan begins with the onsite audit and its report. The result of the audit should be an easy-to-understand report showing:

- Precise energy conservation measures that can be applied
- Cost of the measures
- Energy savings that will result
- Payback period for each of the recommended measures

An integrated audit and program management system allows the auditor to deliver the report to the homeowner at the time and place of audit. Armed with the audit report, the auditor or contractor can assist the homeowner in making an informed decision at the time of the audit. Removing the lag time between the physical audit and delivery of the audit report dramatically increases the conversion rate for recommended measures.

The audit report includes recommended energy conservation measures, their cost, impact on energy savings and payback period. Most homeowners do not agree to all measures immediately. The audit report functions as a project plan for future energy conservation measures, providing the homeowner with a roadmap to maximum energy efficiency and shortest payback period.

The energy auditor often becomes a trusted advisor when he delivers the detailed audit report and guides the homeowner through it. The energy auditor reviews the energy conservation options with the homeowner and identifies which measures will have the greatest and most immediate payback. In this role, auditors can help motivate faster, more informed decisions and raise satisfaction with energy conservation program results.

The most important factor in increasing prospect to customer conversions is being able to deliver detailed, prescriptive reports at the time of the audit. Any delays in delivering the report will reduce the likelihood that the homeowner will agree to the measures.

Integrated Energy Program Management

The home energy audit begins the energy program process; best practices in program management are crucial in continuing the process if these programs are to be successful. The delivery system for energy is complex and riddled with opportunities for mistakes and missteps. Only through real-time monitoring of all participants' activities in the delivery process can a utility or ESCO:

- Establish accountability
- Ensure quality
- Identify bottlenecks and problem areas
- Assess the effectiveness of their energy program

Program management systems connect and integrate utilities, ESCOs, auditors, inspectors and other utilities market players securely in real-time reducing costs and raising efficiencies. With an integrated, online, program management application auditors can upload household data and recommended measures at point of audit, enabling utilities to track the status of each of the recommended measures through the implementation and inspection phases of the program management lifecycle.

This system can be shared with ESCOs, contractors, auditors and inspectors who input, in real-time, the status of measures, work orders, and inspections. The system can also provide near real-time status on the effectiveness of each component of the energy program and identify high-performing and low-performing contractors, auditors, and inspectors within the delivery system.

An integrated program management system ensures that the dollars that are collected through utility surcharges and supplemented by state and federal dollars are wisely spent. Transparency and accountability through a comprehensive energy program management system can ensure that utilities' energy conservation programs are effective, are constantly improving and deliver the maximum potential energy savings to the homeowner and the utility.

Contact Us

28 Gilleard Lane, Framingham, MA 01701-4888

www.hancocksoftware.com | support@ HancockSoftware.com

1.866.358.5217

© 2013 Hancock Software™ | All Rights Reserved