

## **Three Unique Organizations Use a Low-Cost / No-Cost O&M Guide to Train the EnergySmart Schools Workforce**

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### **ABSTRACT**

The central vision of the U.S. Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy Building Technologies Program (BTP) is the realization of marketable net-zero-energy homes by 2020 and net-zero-energy commercial buildings by 2025. EnergySmart Schools (ESS) aims to catalyze significant improvements in energy efficiency across the nation's public K-12 schools. Its goals are to upgrade new schools to 50 percent better than current energy codes and improve existing schools by 30 percent.

ESS released the *Guide to Operating and Maintaining EnergySmart Schools* (O&M Guide) in July 2009 to assist school districts in optimizing facility energy efficiency through low-cost and no-cost existing building operations and maintenance (O&M). The O&M Guide targets facilities managers with different levels of resources available to them and varied amounts of experience with energy-efficient O&M. A key feature of the O&M Guide is a set of customizable Action Plans for each major building system that can be integrated into existing work order systems.

Since the O&M Guide's release, three sets of organizations – the Association of School Business Officials International Texas Affiliate (TASBO) and Energy for Schools, the American Federation of Teachers (AFT) and the Touchstone Energy/National Rural Electric Cooperative Association (NRECA) – have committed to integrating its content into their energy management, indoor air quality and electric cooperative training programs, respectively.

This paper showcases the three sets of organizations' unique strategies and best practices leveraged to implement energy efficiency O&M training. These successes will set a standard for other organizations and school districts integrating energy-focused workforce training into their daily operations.

### **EnergySmart Schools Overview**

EnergySmart Schools seeks to catalyze significant improvements in energy efficiency in the nation's public K-12 schools through public/private partnerships at a time of enormous opportunity. It is projected that over the next three years, state and local agencies will invest \$50 billion<sup>1</sup> to build or renovate schools. Concurrently, schools are experiencing rising costs, limited budgets and aging facilities.

EnergySmart Schools bridges the gap between both realities. The program's *EnergySmart Schools Solutions* CD supports the planning, financing, designing and building, and operating and maintenance of high performance schools. The Solutions CD targets all audiences

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<sup>1</sup> School Planning & Management Magazine's 2009 Annual School Construction Report  
<http://www.peterli.com/spm/resources/rptsspm.shtml>

and levels of experience (facilities managers, teachers, school business officials, and school board members). The tools include the following resources available at [www.energysmartschools.gov](http://www.energysmartschools.gov):

- *Guide to Financing EnergySmart Schools*
- *American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Advanced Energy Design Guide for K-12 Buildings* (Guide and Webinar)
- *Guide to Operating and Maintaining EnergySmart Schools* (Guide and Webinar)
- *Supplemental fact sheets and case studies*

EnergySmart Schools is endorsed by the National School Boards Association (NSBA). Other primary stakeholders include the Association of School Business Officials International (ASBO), American Association of School Administrators (AASA), and Council of Educational Facility Planners (CEFPI).

## **Guide to Operating & Maintaining EnergySmart Schools**

The *Guide to Operating and Maintaining EnergySmart Schools* is a resource published by DOE to assist school decision-makers in planning, financing, operating, and maintaining energy efficient, high performance schools. The O&M Guide builds upon existing O&M resources published by DOE and other stakeholder organizations. A working group of over 20 O&M experts reviewed and validated the O&M Guide's content throughout the entire development process.

The O&M Guide's structure makes it accessible to a diverse audience. The executive summary targets school board officials, senior administrators and business officials, while chapters are subsequently divided to target facilities staff with different levels of experience and resources. The Guide comprehensively addresses how to develop a business case to ensure buy-in from officials. It also outlines steps for O&M program development, with emphasis on engaging stakeholders. Technical suggestions are targeted at facilities managers and staff of all levels of expertise and resources. To facilitate O&M planning, the O&M Guide provides customizable Action Plans organized by building system.

The Guide was distributed to the EnergySmart Schools stakeholder network of administrators, business officials, facility planners and other school district representatives and high performance school advocates. Three sets of organizations committed to incorporating the O&M Guide content into their existing training programs. The results of their efforts are profiled in this paper.

## **Overview: Training an EnergySmart O&M Workforce**

The following three sets of organizations and training programs target a diverse set of audiences using a variety of training strategies. The Association of School Business Officials International Texas Affiliate (TASBO) and the Energy for Schools program target school facilities personnel directly through instructor-led classroom training and individual district energy reviews. The American Federation of Teachers (AFT) plans to train custodial and maintenance members of their union to analyze their individual district's cleaning and maintenance policies, plans and practices through in-person training and hands-on activities. In

contrast, the Touchstone Energy/National Rural Electric Cooperative Association (NRECA) reaches school facilities personnel through electric cooperative staff trained to tackle school facilities energy issues. The Touchstone Energy/NRECA training also emphasizes benchmarking and data collection to optimize energy reduction. The common goal of all three sets of programs is not only to train individual maintenance staff, but also to inspire them to educate and influence others in their districts (e.g. administrators, business officials, teachers, and students).

## **Association of School Business Officials International Texas Affiliate (TASBO) and Energy for Schools: Energy Management Training Program**

### **Introduction to the Organizations**

**Association of School Business Officials International Texas Affiliate<sup>2</sup>.** TASBO is one of the 60 state and international affiliates of the Association of School Business Officials International (ASBO). TASBO is an independent non-profit professional association dedicated to being the trusted resource for school business and operations in Texas. TASBO offers three Certification programs for members and non-members that are achieved through completion of required courses taught by a number of approved instructors, including Lookabaugh & Simmons, and demonstrated job experience and minimum education level. The certifications are (1) Certified Texas School Business Specialist, (2) Certified Texas School Business Official and (3) Registered Texas School Business Administrator. The O&M Guide content is incorporated into coursework.

**Energy for schools.** Energy for Schools<sup>3</sup> provides electricity aggregation services for 131 school districts, 6 education service centers and community colleges in Texas. The program also offers complimentary energy management and aggregation courses to its members through Lookabaugh & Simmons.

**Lookabaugh & Simmons.** Through the TASBO and the Energy for Schools programs, Greg Lookabaugh and David Simmons develop and teach energy management courses to school facilities staff, business officials and other administrators. They also offer district facility reviews. Combined, they have over 60 years of school business experience in facility operations and both have held various TASBO committee chair positions.

### **Introduction to the Training Programs**

Through the Energy for Schools program, Lookabaugh & Simmons have been updating the *Energy Management Academy* curriculum, relying heavily on the O&M Guide materials. Classes will be held in the Fall at approximately 100 school districts. The pair also collaborated on the development of three courses as part of the TASBO certification program: (1) *Customizing Your Energy Management*, (2) *Management of Maintenance Activities*, and (3) *Understanding and Applying Building Energy Technology*. The course contents are provided

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<sup>2</sup> Texas Association of School Business Officials. [www.tasbo.org](http://www.tasbo.org)

<sup>3</sup> Energy for Schools ([www.energyforschools.com](http://www.energyforschools.com)) is organized under the authority of the Texas Local Government Code with the exclusive purpose to negotiate the purchase of electric services on behalf of its members. (See TEX LG.CODE ANN 304.001: Aggregation by Political Subdivisions, subsection (a)) (<http://codes.lp.findlaw.com/txstatutes/LG/9/C/304/304.001>)

through instructor-led presentations with supplementary materials to facilitate learning, which include the O&M Guide. The TASBO courses are usually offered during the organization’s annual conference or as requested. As with the Energy for Schools Academy, the TASBO courses are also offered on-site at various school districts across Texas.

<p><i>Energy Management Academy</i> training is expected to be offered three times annually in the following years to members of the Energy for Schools program, with approximately 20 to 30 participants per session. The Academy will be complimentary at a convenient location for all members. Participation in the Academy does not contribute toward any certification.</p> <p>The TASBO courses, <i>Customizing Your Energy Management</i>, <i>Management of Maintenance Activities</i>, and <i>Understanding and Applying Building Energy Technology</i> are six hour courses, with approximately 30 to 50 participants per course. Each is followed by an exam. Upon successful completion of the courses and exams, individuals receive credit for completion that can be used toward achieving or maintaining their TASBO certifications.</p>	<p>The training covers seven topic areas including:</p> <ol style="list-style-type: none"> <li>1. Energy audit process</li> <li>2. Energy regulatory compliance</li> <li>3. Developing energy management policies</li> <li>4. Energy procurement and aggregation</li> <li>5. Energy management controls and software</li> <li>6. Energy- efficient equipment</li> <li>7. Top Ten List: Why School Districts Have Difficulty Controlling Energy</li> </ol>
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Aside from the structured courses, Simmons & Lookabaugh also educate Texas school districts by conducting facility energy reviews/walk-throughs. The two experts help districts recognize opportunities to reduce energy waste in the form of poor facilities maintenance and improper systems operations. Videotaping of the walk-throughs is under consideration, so that they can be used by others as learning tools.

**Incorporation of O&M Guide Into Existing Training**

**Overview.** The decision to incorporate the O&M Guide content into their existing TASBO training programs was simple for Lookabaugh & Simmons. They provided feedback on the O&M Guide content and structure during its development. Therefore, they already integrated a large portion of the Guide’s content into their energy reviews and courses. For example, both the O&M Guide and the subject matter experts recommend implementing low-/no-cost actions for districts to reduce energy consumption without committing large financial investments. They view the O&M Guide as a well-packaged resource to help them reinforce the same concepts they follow and teach. In May 2010, they introduced the O&M Guide at two TASBO Maintenance Academy presentations and distributed the EnergySmart Solutions CD to participants. They also introduced the Guide at a certification class they conducted.

In addition to incorporating the O&M Guide into the existing training courses mentioned above, Lookabaugh & Simmons has integrated the customizable Action Plans into facilities energy reviews. They are exploring the use of the Action Plans in an electronic format so that the ability to add comments is available.

They also use the O&M Guide content (Chapter 2, *Developing and Implementing and Energy Management Plan*) to enhance district specific energy management plans. In addition, the pair have been updating the *Energy Management Academy* for the Energy for Schools members that specifically focuses on the O&M Guide content to expand recommendations and support their personal experience and anecdotes.

**Best practices.** The TASBO and Energy for Schools trainings are innovative in their approaches to reach their audience. The courses are provided in conjunction with annual conferences and at locations close to the districts. This allows greater participation from district facilities staff, especially those with limited training and travel budgets. At the 2010 TASBO annual conference, Lookabaugh & Simmons taught the *Management of Maintenance Activities* course attended by representatives from 30 districts. This was the first session where the two informally incorporated the O&M Guide content into their training by elaborating on the critical factors (Page 11-12, *Develop an Energy-Focused O&M Program* section). While there currently is no online version of the training program, the option of offering online courses and webinars is under consideration. Should these be developed, training could reach an even broader segment of the workforce.

Lookabaugh & Simmons' outside-of-the classroom training approach in the form of facilities energy reviews connects concepts with hands-on applications to help solidify the knowledge. For example, the O&M Guide recommends identifying low-/no-cost solutions using walk-throughs or energy audits of the facilities. In one such specific review, Lookabaugh & Simmons identified a set of school buildings that were left to operate as if at full capacity over the summer. Rather than recommending that the school system turn the power off completely, Lookabaugh & Simmons suggested a safe energy management plan that not only reduced energy waste, but also protected the indoor air quality and durability of the building.

Through the TASBO courses that teach the importance of O&M policies and plans, Lookabaugh & Simmons have already noticed a change in the demographics of their participants over the past four to five years. They noticed that participants of their courses are diversifying to include school administrators and business officials. Members of the upper administration and management are beginning to make the link between facilities operations and budgetary consequences.

Anecdotally, Lookabaugh & Simmons have witnessed districts becoming more conscientious of their energy costs and maximizing facilities' capabilities to save energy. For example, many districts in Texas are consolidating special summer programs to maximize building capacity, and working with custodial staff to manage lighting and HVAC usage only in occupied areas. This demonstrates the impact that a trained and educated workforce has on the clean energy economy.

**Challenges.** The primary challenge identified involves fundamentally changing the facilities management operations and maintenance process. Lookabaugh & Simmons found that regardless of the caliber of the training program, to instill and ensure behavioral change requires reinforcement of the knowledge with constant reminders, communication and follow-up. As Greg Lookabaugh states, “change is not an event, it is a process.”

## **American Federation of Teachers (AFT): Indoor Air Quality Training Program**

### **Introduction to the Organization**

The American Federation of Teachers is a union that represents pre-K-12 grade teachers, paraprofessionals (teachers’ aides), school maintenance, custodial staff, food service and bus drivers. The organization consists of almost 3,000 local affiliates and more than 1.4 million members. For the last 8 years, the AFT has held training programs for all of its constituencies. The AFT focuses on promoting the professional, economic, social, and workplace concerns of its members.

### **Introduction to the Training Program**

AFT has developed its instructor-led *Best Practices for Building Operation and Maintenance* training as part of its “Building Minds, Minding Buildings” program that started in 2006. The program promotes healthy and energy efficient school facilities construction, operations, maintenance and cleaning. It is centered around the idea that school environments and academic agendas are linked. The training course is targeted towards school districts’ custodial and maintenance staff to foster healthy indoor air quality and conserve energy concurrently. Part of the training seeks to give participants an opportunity to assess and evaluate their current school district’s operations and maintenance programs to identify areas for improvement. AFT has no plans at this time to offer training online, believing that in-person training is more effective for this audience.

Upon completion of the course, participants will understand:

- Their role in operating and maintaining the building
- Best practices for school operation and maintenance including tracking energy use; adhering to manufacturer specifications including filter changes; and inspecting and maintaining HVAC systems
- Process to assess current school district policy and practices
- Methods for educating and informing school building occupants and securing their cooperation in the operation and maintenance of the building.

The *Best Practices for Building Operation and Maintenance* training is three and a half days long and includes both classroom and hands-on components. The training will be held annually for approximately 30 participants for whom AFT will cover travel expenses.

**Day 1:** an overview of indoor environmental quality problems in schools and methods for inspecting schools and systems

**Day 2:** teams will use checklists to inspect an actual school and building systems

**Day 3:** participants will review their school district operations and maintenance plans and compare those plans to the O&M Guide and EPA's Tools for Schools (TfS) materials. Participants will also identify essential training

**Day 4:** participants will outline recommendations for improving the O&M processes to their local union leadership and districts

Additional partners and stakeholders of the *Best Practices for Building Operations and Maintenance* training include local AFT affiliates, the U.S. Green Building Council (USGBC) and the Collaboration for High Performance Schools. In addition to the ESS O&M Guide, the course incorporates USGBC Leadership in Energy and Environmental Design (LEED) and U.S. Environmental Protection Agency (EPA) materials.

### **Incorporation of O&M Guide into Existing Training**

**Overview.** One important objective of the *Best Practices for Building Operations and Maintenance* training course is to provide participants with a method to assess their district's current O&M policies and plans. The course uses the O&M Guide recommendations as the "ideal" situation for districts to compare their individual policies, plans and practices against to identify gaps and shortfalls.

The training course curriculum is essentially completed. In April 2010, AFT conducted a two-hour "awareness" class that provided about 40 custodial and maintenance staff members with an overview of the O&M Guide, highlighting the elements of a good O&M plan. The three-and-one-half-day program has been delayed, however, due to extensive cuts among the target audience and resulting tight staffing.

(In addition to incorporating information from the O&M Guide into training for custodial and maintenance staff, AFT will include the Guide on a CD provided to participants of future Indoor Air Quality courses offered to mixed groups that also include teachers and school nurses.)

**Best practices.** The AFT training course guides participants through the analysis of their individual district's policies, plans and practices to identify areas for improvement while learning the principles in the O&M Guide. This approach makes personal connections between the training material and district practices. In addition to educating participants on ESS O&M Guide, upon completion of the course the participants will walk away with an improved version of their district's policies and practices to provide to their district's administrators.

Another goal of the training program is to introduce participants to the benefits of O&M training and certification programs. Armed with this knowledge, custodial staff can affect change within their local union and demand O&M certification for custodial and maintenance staff during labor management negotiations and committees. For example, custodians/facilities staff can bargain to give teachers an annual presentation of the facility's specific O&M issues for educational awareness. The AFT participants may also use their collective bargaining power to negotiate for districts' joint O&M committee to review O&M policies together and regularly.

**Challenges.** Because of cuts to custodial and maintenance staffs, plans to pilot the three-and-one-half-day training program this summer have been delayed. For now, AFT is planning to begin bringing smaller groups of custodial and maintenance workers to the National Labor College in Silver Springs, Maryland, for "train the trainer" courses. Participants will be given checklists and instructions intended to enable them to evaluate and improve O&M practices in their districts, and to train fellow staff members. This will begin in November or December 2010.

## **Touchstone Energy/National Rural Electric Cooperative Association (NRECA): Electric Cooperative Training Program**

### **Introduction to the Organizations**

**National Rural Electric Cooperative Association.** NRECA represents over 900 member non-profit electric cooperatives and their customers. While their membership ranges from dense urban areas to sparsely populated rural ones, schools are found in all cooperatives and are often community focal points.

**Touchstone energy.** Touchstone Energy is an alliance of approximately 700 NRECA cooperatives. They provide a platform for shared marketing resources and other value-added functions. Touchstone Energy's "Together We Save" program promotes energy efficiency measures among consumers. They are also involved in development of content for NRECA's energy efficiency training focused on schools.



## Introduction to the Training Program

Touchstone Energy/NRECA’s training program, tentatively named “**Touchstone Energy School Energy Efficiency Program,**” is targeted towards electric cooperative staff across the country that will provide facilities energy management support to school facilities personnel within their cooperative’s footprint.

NRECA has taken a particular interest in managing the energy use for its school district customers. In some cases, the aggregate load of school facilities makes the district a larger customer than industrial entities within a cooperative’s footprint. For example, the Jackson Electric Membership Corporation in Georgia serves a 10-county area northeast of Atlanta with 200,000 members. While the cooperative serves many large industrial customers, taken in aggregate, Gwinnett County Schools is their largest customer in terms of amount of energy sold. Additionally, NRECA has found that many of the schools were built more than 30 years ago and do not have enough resources to complete basic upgrades. This creates large opportunities to implement simple low-/no-cost operations and maintenance practices to reduce energy consumption and improve the overall educational environment.

The Touchstone Energy/NRECA training is intended to provide cooperative staff with information on school facilities energy issues, thereby allowing them to be more effective as energy management experts when interacting with schools staff and conducting walkthrough energy audits. Because of the budget limitations that most schools are facing, the training agendas focus on low-/no-cost energy efficiency opportunities at existing facilities. The training also equips cooperative members with benchmarking tools, including EPA’s Portfolio Manager, to identify top performers as well as low performers. While lessons learned from top performers will be identified and disseminated, cooperative staff will focus their attention and resources on working with low performers to reduce energy use.

<p>The <i>Touchstone Energy School Energy Efficiency Program</i> aims to equip cooperative staff to educate facilities staff through on-site interactions at school facilities. Major focuses include:</p> <ul style="list-style-type: none"> <li>▶ <u>Energy Walkthrough Audits:</u> Utilized by cooperative staff to educate school facilities personnel on energy O&amp;M issues</li> <li>▶ <u>Benchmarking Tools:</u> Enables cooperative staff to identify low performers to focus attention on, as well as top performers from which to identify best practices</li> </ul>	<p>The first training took place May 10, 2010 at the CONNECT 2010 Conference &amp; Expo in Kansas City, Missouri. Training topics included:</p> <ul style="list-style-type: none"> <li>▶ Why focus on school energy efficiency?</li> <li>▶ Program objectives and overview <ul style="list-style-type: none"> <li>○ Focus on existing facilities and no-/low-cost opportunities</li> </ul> </li> <li>▶ Main components <ul style="list-style-type: none"> <li>○ Benchmarking</li> <li>○ Walk-thru audits*</li> <li>○ Resources – training, websites, etc.</li> </ul> </li> <li>▶ Steps to starting your own program</li> </ul> <p><i>* incorporates the DOE O&amp;M Guide methodologies, resources, and check lists</i></p>
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About 90 people attended the training in a pre-conference workshop at CONNECT 2010. The training now is offered to co-ops on demand. Touchstone Energy/NRECA’s target size for trainings is 20 to 30 cooperative staff members. Training sessions are often conducted at

statewide or regional levels to reach more participants. Additional training may be offered at future conferences and regional cooperative meetings.

Several co-ops that were introduced to the program at the conference expressed interest in conducting training for school facilities personnel within their co-op's footprint. In order to do so, they must participate in a special one-day training session, for which scheduling is in process.

Another key partner in the training program, aside from the member cooperatives, is the National Information Solution Cooperative (NISC). NISC is an information technology cooperative that develops and supports software and hardware solutions specializing in meter data collection, management and billing services. The organization will be instrumental in streamlining efforts to incorporate energy billing data into EPA's Portfolio Manager.

In addition to using the O&M Guide, Touchstone Energy/NRECA incorporated EPA's Tools for Schools training materials for K-12 schools along with Portfolio Manager for benchmarking. The program utilizes trainers who have experience speaking about commercial audits, lighting, and other energy management topics.

Although the Touchstone Energy/NRECA training is not a mandatory requirement for any cooperative staff, upon completion, the course credit may be applied towards obtaining or maintaining Key Account Certification. NRECA's key account professionals work closely with key electricity customers within a cooperative footprint.

### **Incorporation of O&M Guide Content into Existing Training**

**Overview.** To date, Touchstone Energy/NRECA has provided the O&M Guide as a resource to two pilot school districts by working with staff members possessing facilities energy expertise to help the districts identify energy reduction solutions.

The two pilot sites are located in Douglas County school district west of Atlanta, Georgia (served by Greystone Power electric cooperative) and Jessamine County Schools near Lexington, Kentucky (served by Blue Grass Energy electric cooperative). The O&M Guide content was incorporated into a series of energy audits and benchmarking plans. Energy audits were conducted and benchmarking utilized to establish a baseline and help prioritize energy efficiency opportunities. The Guide served as a useful reference for both the people conducting the audits and the school facilities staff that received the results. Benchmarking will be used to track the impact of improvements recommended. Implementation of the recommendations is in process.

Staff at the pilot sites provide feedback on the utility of the tools and resources toward accomplishing energy efficiency goals. Such ongoing feedback serves as the basis for constant revision of Touchstone Energy/NRECA's curriculum and materials. In addition to the completed curriculum, which was inaugurated by a half-day workshop May 10, 2010, a related Web site was made available. It can be accessed at [www.schoolenergysaving.com](http://www.schoolenergysaving.com). The Web site is designed so that varied audiences can find information that is appropriate to their needs. The site will be updated to include case studies, forums for communication for schools and co-ops, and a portal to access benchmarking data.

***Pilot Project Events Highlighting O&M Guide Lessons Learned:*** NRECA and Touchstone Energy incorporated the O&M Guide recommendations into a one-day lighting project at Lithia Spring High School in Douglas County, Georgia. More than 100 electric cooperative volunteers made simple improvements such as changing burned out fluorescent lamps, installing LED exit signs, and switching incandescent lamps to compact fluorescents.

**Best practices.** While it is often the case that cooperative staff and school facilities personnel already enjoy a good working relationship, the materials provided through the O&M Guide have allowed the two groups to strengthen their partnership's shared goal of reducing energy use. For example, existing facilities walk-throughs are enhanced by the Guide's Action Plan content.

Additionally, the pilot program approach allows Touchstone Energy/NRECA to test a variety of resources and methodologies for training and educating school facilities staff and implementing energy management plans. This gives Touchstone Energy/NRECA the opportunity to identify best practices for a larger scale school energy management program.

**Challenges.** In developing training, Touchstone Energy/NRECA's main challenge was in distilling the large volume of information available to meet the needs of an audience of electric cooperatives. The O&M Guide was helpful in condensing the information. The Web site links interested parties to resources specific to their interests and needs so that information is not overwhelming.

**Next steps.** The current training efforts focus on providing cooperative members with the tools to engage school facility staff through energy walkthroughs, benchmarking, and other constructive energy efficiency exercises. Another area where Touchstone Energy/NRECA would like to focus is teacher and student behavioral changes that help increase energy savings. Training in this area will take place in 2011.

## **Conclusion**

### **Lessons Learned from the Three Organizations and their Training Programs**

When a link between O&M and its impact on energy consumption is demonstrated, audiences see the benefits of O&M as an energy management strategy. Because behavioral change takes place over a period of time, training needs to be reinforced consistently and communication needs to be ongoing. While economic challenges can limit participation in training programs, participation can be enhanced by conducting programs at multiple locations, as well as at conferences that organization members normally attend. Train-the-trainer classes can help extend the reach of a program during times of economic difficulty. An online presence may enable even broader participation. Pilot programs are helpful in identifying best practices, which then can be applied to training larger audiences. Feedback is necessary to continually upgrade training materials. Regardless of the training program, however, ongoing success depends on finding local champions.

## **Commonalities Between the Three Organizations in Integrating the O&M Guide Content**

The programs are designed to train audiences that are generally similar, primarily school facilities personnel. The Touchstone/NRECA program, however, is designed to directly train co-op personnel, who, *in turn*, train facilities personnel. In addition to training participants, the programs are designed to inspire participants to influence others in the district with energy-saving messages, practices and behaviors. All programs currently involve a direct, in-person approach, though online training is being considered by two of the three programs. Credit for training is available to participants in many of the programs. All, in some way, incorporate a hands-on component. Each program includes either the Guide itself, or portions of the Guide, as supplementary material.

### **Summary of Best Practices, Common Themes, etc.**

It is wise to conduct the training at conferences that are commonly attended by the intended audience, as well as in state and regional areas. Participants should be taught to view change as a process rather than an event. Knowledge—and behavioral changes— should be reinforced by frequent reminders and communications. It is best to give participants the opportunity to evaluate their district’s current O&M practices and make recommendations for improvement, connecting what they learn in training with practices in their district. Many of the programs offer or support some form of certification.

### **Additional Information Regarding Workforce Training, Where Applicable**

Energy-efficient O&M practices may get a boost through AFT’s program, which aims to introduce participants to the benefits of O&M training and certification programs and enable them to increase awareness and to influence others in their district. The TASBO courses support professional development and recognition in this discipline by offering participants credit toward achieving or maintaining their TASBO certification. Touchstone Energy/NRECA course credit may be applied towards obtaining or maintaining Key Account Certification for professionals who work closely with key electricity customers within a cooperative footprint. Certification may broaden the appeal of this topic of study, widening awareness of energy-efficient O&M and causing positive behavioral changes.

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