

ACHIEVING ENERGY EFFICIENCY IN GOVERNMENT OPERATIONS: THE LOCAL ENERGY OFFICER PROJECT

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ABSTRACT

For many local governments in North Carolina, energy costs represent the second largest operating expense, exceeded only by personnel costs. Almost \$650,000 in savings were realized in two years by seventeen governments participating in the demonstration phase of the Local Energy Officer (LEO) project. Costs were controlled by trained, in-house personnel who monitored consumption and improved energy efficiency. Each officer saved an average of \$2 for every \$1 expended for their salary and benefits.

A salary guarantee offered by the North Carolina Alternative Energy Corporation (AEC) presents a unique marketing approach to an institutional energy management program. Each local government agrees to hire or internally reassign an energy officer and to fund economic capital investments. In exchange, the AEC trains the officers, provides technical assistance, and guarantees that in two years the government will save in energy costs what they pay the energy officer in salary and benefits. If not, the AEC will reimburse the difference. After the the first two years of operation, the AEC will pay less than 3% of the guarantees.

A revised LEO model is currently being applied with thirteen additional governments. The experiences derived from the two demonstrations will be used to promote the use of an in-house energy manager to other local governments across the state. This paper focuses on the prime savings opportunities in local governments, the methods for overcoming institutional barriers, the role of the salary guarantee, the methods for calculating savings, and the design of a self-sustaining program.

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OVERVIEW

The major question facing the NC Alternative Energy Corporation (AEC) in the local government sector in 1982 was: **What is inhibiting cities and counties from adopting energy management measures and what will motivate them to take action?** Almost every local government in the state had at least one engineering audit on the bookcase. But, relatively few had implemented the recommendations from these reports on how they could improve the energy efficiency of their operations. The average per capita energy expenditure was \$45 for most municipalities and \$5 for most counties, an amount equivalent to 2-10% of the government's total expenditures. Major energy users, for whom energy costs were often second only to personnel costs, were bypassing a significant opportunity for cost-containment. Why? The reasons were many, including lack of capital and on-staff expertise, doubts about the potential for energy savings, and resistance to adding any new programs.

AEC's response was to offer, on a trial basis, an incentive that would enable local governments to assign staff to energy management duties and at the same time insure that this investment in staff costs would be equalled by future energy savings. The unique "incentive" of the Local Energy Officer Project (LEO) developed in 1982 was the **salary guarantee**. Each participating local government agrees to hire or internally reassign an energy officer and to fund economic capital investments. In exchange, the AEC trains the officers, provides technical assistance, and guarantees that in two years the government will save in energy costs what they pay the energy officer in salary and benefits. If not, the AEC will reimburse the difference.

The AEC has worked with thirty governments in two separate field tests (see Figure 1). **The seventeen municipalities and counties who participated in the first demonstration saved almost \$650,000 or \$2 for every \$1 that the governments expended for salaries and benefits.** Only three percent of the salary guarantees were reimbursed. A revised LEO model is currently being applied with thirteen additional governments. The experiences derived from the two demonstrations will be used to promote the use of an in-house energy manager as well as other methods of energy management to other local governments across the state. The ultimate goal is to convince local government officials that energy management is an important tool in any fiscal management program.

This paper focuses on the use of a salary guarantee for encouraging officials to develop an internal energy management program for local government operations. We have determined that the salary guarantee is an extremely effective marketing tool and risk-reducer for local governments. But, it must be accompanied by a comprehensive program of technical assistance and emphasis on implementation. Discussions will focus on the original design of the program, the changes made to the program as a result of the first field test, and the future directions of the project.

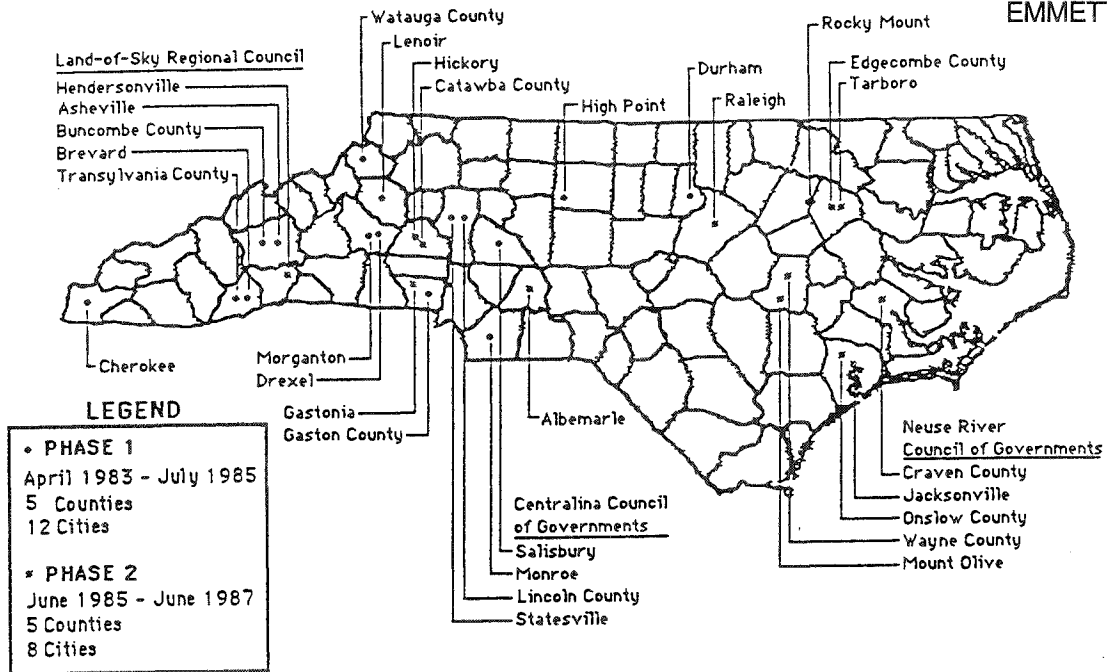


Figure 1: Local government participants in the LEO project.

PROGRAM DESIGN

In early 1982, the AEC held discussions with utility representatives and other knowledgeable persons within local governments, universities, the state energy office, and a small, but active state association of energy coordinators. This group of people as well as surveys performed by Dr. Beverly Cigler with the NC Local Energy Policy Project at North Carolina State University¹ identified several barriers that prevent most local government officials from developing a comprehensive energy management plan. First, many believe that rising energy costs are a national and international problem and therefore not within the control of the local government. Second, there is a perception that energy conservation and management is highly technical, requiring large sums of money and a great deal of engineering expertise. Finally, government officials are not convinced that energy management saves money. Based on the barriers noted in Cigler's study, interviews with NC government representatives, and consultation with government energy experts across the country, the AEC designed a multifaceted program that provides for an in-house energy manager supported by an Energy Advisory Committee composed of line employees and managers as well as outside technical assistance and training. To minimize the perceived risk that energy management might not save money and to overcome the barriers to developing new positions in a government's structure, the AEC created a salary guarantee. This unique incentive guarantees that if the in-house energy manager or Local Energy Officer (LEO) does not save in energy costs an amount equal to his or her salary and benefits, AEC will reimburse the difference.

The In-House Energy Manager

The Local Energy Officer model is premised on the importance of a central contact within a municipal or county government who can assess, coordinate, and facilitate energy management activities. A 1983 evaluation of the Institutional Conservation Program by Synectics Group, Inc. for DOE discovered that while investments in energy-conserving hardware save energy, the commitment of personnel, particularly institution managers, is critical to maximizing savings. Throughout the

evaluation, energy performance clearly related to the commitment of the designated energy manager. Administrators who exercised leadership and were directly involved in the conservation activities constituted an important element of the successful energy programs.²

However, the in-house energy manager must be well supported by other government employees. Energy use is not isolated within one department or function of government operations; therefore, an in-house energy manager must work closely with personnel in all elements of government. Just as expenditures of energy involve the decisions of many persons, actions to control or change the use of energy require the agreement of many primary decisionmakers. To facilitate this process, each LEO is encouraged to establish an Energy Advisory Committee composed of department heads and other key employees who might be influential in coordinating energy management activities. This model creates an interdisciplinary team approach that can provide most of the varied skills and inclusion of key decisionmakers, both are necessary for a successful energy management program.

The Local Energy Officer's general responsibilities include educational, technical, and administrative activities. Each LEO is responsible for educating city/county personnel through the formal interdepartmental Energy Advisory Committee, informal meetings with department heads, maintenance staff, and other personnel, and presentations to County Boards or City and Town Councils. The LEO also has a role in the technical aspects of energy management. Energy Officers track historical and current energy costs and consumption for each facility with an energy accounting system, identify energy cost saving opportunities, and coordinate the installation of energy saving equipment and the implementation of policies and procedures that will reduce energy costs. Administrative duties consist of identifying ways to finance more complex/costly measures and preparing a budget for energy improvements.

Differences in geographical size, population, government personnel, and financial resources call for a flexible, coordinated approach. To provide for smaller governments that can not support a full-time energy manager, the AEC supported both the use of current employees as part-time energy managers and the use of circuit-riding LEOs. The circuit-riders are sponsored by Councils of Governments (COGs), regional organizations established to provide a multitude of shared services to the municipalities and counties of an 8-10 county region. Each local government pays a fee to the COG for the services provided. In the case of the Local Energy Officer program, the aggregate fees are equivalent to the total salary guarantee.

The Salary Guarantee as an Incentive

Previous local government energy management programs have addressed only one aspect of energy management such as training or technical assistance, but did not directly motivate the local government to actually implement the identified energy efficiency improvements. Consequently, the actual savings often never materialized. With responsibility for identifying and implementing energy improvements, an in-house energy manager provides the link required to bring a good idea from paper to actual savings in energy dollars. However, in these times of budget cutbacks and reduced tax opportunities, local government officials are wary of adding a new staff position. Further complicating the hesitancy to hire is the distrust of the cost-saving capabilities of energy management.

To overcome these barriers, the AEC designed an incentive program that guarantees a fixed amount intended to cover the salaries and benefits of the Local Energy Officer. With the assurance that the government will be reimbursed for any costs for salaries and benefits over and above the amount of energy dollar savings, local government officials are more willing to institutionalize energy management by hiring, or internally reassigning, an in-house energy manager. Since savings do not

accrue without implementation, the salary guarantee also motivates each government to implement the recommendations for improving energy efficiency.

Other Program Elements

In addition to the centralization of energy management responsibilities with the LEO, the interdisciplinary support provided by the Energy Advisory Committee, and the incentive offered by the salary guarantee, a successful program must also provide training and technical assistance. Each participating local government receives administrative, managerial, and technical assistance from the AEC. The governments are also encouraged to use other sources of assistance such as utility representatives, the state energy office, and local consulting engineers. The Project Manager meets with city and county managers and supporting staff to assist in developing goals and activities for each government's program; writes and distributes a bimonthly newsletter, the "LEO Connection"; and arranges periodic workshops. An engineer also reviews all energy accounting data and recommendations submitted by the LEOs, assists with walkthrough audits and savings calculations, and provides over-the-phone troubleshooting. In the first demonstration, engineering assistance was provided through a contract with a consulting engineering firm. Currently, this assistance is being provided by the AEC Project Manager who is trained as an engineer and has experience as an LEO.

LEOs participate in an initial training session that orients them to the duties of an Energy Officer. This three-day course emphasizes basic energy management procedures such as energy accounting, building systems, energy auditing, employee education, energy management in water and wastewater plants, financing options, and workplanning. Existing material available from the now defunct National Community Energy Management Center, the NC Energy Division, and the Dubin-Mindell-Bloome manuals were used as the foundation for the course material and accompanying training manual. In addition to the initial session, other workshops are conducted to encourage LEOs to remain current in their knowledge of energy management practices and to share local experiences with other Energy Officers.

The Contractual Agreement

The components of the program - an in-house energy manager, the salary guarantee, technical assistance, and training - are delineated in a two-part reciprocal agreement between the AEC and each participating local government. Each government is responsible for hiring the LEO and setting the amount of salary and benefits with the AEC guaranteeing a fixed amount. All governments with full-time LEOs receive a salary guarantee of \$22,500 annually or \$45,000 over the two year project. The guarantee is prorated to reflect part-time Energy Officers. For example, if a circuit rider LEO spends 40% of his time in one city and 30% in each of two counties, then the two year guarantee is \$18,000 for the city and \$13,500 for each of the counties. A government that wishes to re-assign a current staff member as a part-time LEO also receives a pro-rated guarantee.

The second component of the agreement commits the local government to implementing any measures recommended by the LEO with a payback of three years or less. Participating governments were encouraged to appropriate funds for the anticipated energy improvements. In return for a promise to implement the identified measures, the AEC agrees to provide technical assistance and training at no cost to the government.

THE RESULTS OF PHASE 1

Seventeen governments including 12 cities and 5 counties with populations ranging from 1520 to 106,115 participated in the first demonstration from April of 1983 until July of 1985. The total energy budget of the participants was \$16.8 million with a range from \$55,475 to \$2,800,000. These seventeen governments were selected from a field of forty who responded to an invitation to all of the state's municipalities, counties, and Councils of Government. Final selection was based on the government's commitment to integrating energy management into their operations, willingness to serve as a model, and potential for substantial short-term savings.

Energy Savings as Related to the Salary Guarantee

Total savings for the two years of the first demonstration were slightly less than \$650,000, an amount equivalent to \$2 for every \$1 expended by the governments for the salaries and benefits of the LEOs. Savings as a percentage of the total energy budget, including vehicle fuels, ranged from 0.2% to 12.2% with a weighted average of approximately 2.0%.

Two guarantees were not met and those governments were reimbursed for the difference between the actual savings and the guarantees. In one municipality, the water treatment plant was closed down. The salary guarantee was based on the potential for savings in this facility. Since the city was operating efficient buildings prior to the inception of the LEO program, the city was unable to meet the guarantee. In the other government, administrative problems on the part of the city created a delay with implementation. Unfortunately, an amendment to the contract renegotiating the salary guarantee to reflect the delay in implementation was lost in the shuffle of changing project managers at the AEC. Because part of the problem was with our administration of the program, we were amenable to providing a reimbursement. Interestingly enough, the city's problems with implementation have been mitigated with significant savings expected in the year following the program. Even with the two payouts, the AEC paid less than 3% or \$7432 of a potential \$251,625 liability, an excellent track record for the first demonstration of a new program. Figure 2 graphically depicts the savings for the two year program as related to the salary guarantee. It should be noted that one government participated in the program but did not contract for the salary guarantee; therefore, only sixteen governments are listed in the chart.

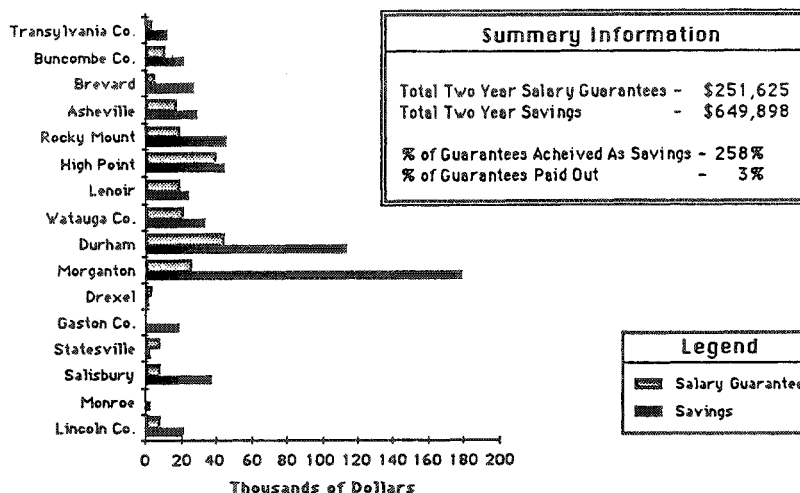


Figure 2: Two year savings as related to the salary gaurantees.

Energy Savings as Related to LEO Activity

Of the total savings, 36% (\$235,225) resulted from energy accounting, 36% (\$232,970) from energy conservation, 1% (\$5677) from the closing of facilities, 1.5% (\$9231) from fuel switching, 19% (\$124,432) from changes to more effective rate schedules, and 6.5% (\$42,363) from other activities. Because of the AEC's mandate to reduce electric loads, technical assistance focused on the opportunities available in buildings and other electricity intensive facilities. Furthermore, the quickest, simplest, and most visible opportunities can be found in buildings.

As a result of this focus, the majority of the savings were generated from improvements made to buildings, with the types of measures varying from community to community. Some LEOs made major changes in HVAC systems and operations, other concentrated on changing billing structures and rate schedules. Virtually, all of the operational and maintenance measures that were identified were implemented. These included delamping, night setback of thermostats, resetting of timeclocks, setting thermostats to authorized criteria, and shutting off unnecessary equipment. Most of the identified more capital intensive measures were also implemented, including ceiling insulation, second glazing on windows, swimming pool covers, and programmable thermostats and timeclocks.

Activities in water and wastewater plants also generated significant savings with most of the savings in these facilities resulting from the correction of billing errors or switching to more favorable rate schedules. By installing a plant-wide computerized process and energy controller in the wastewater plant, one city saved \$13,376 during FY 84-85. Another government assigned the LEO to be the technician to a consulting engineer during an energy audit of the water pumping and treatment system reducing the price of the contract by \$16,600. Without a trained energy professional on staff, the city would not have been able to participate in this opportunity. Therefore, even though the savings were not in energy dollars, they were counted as savings from the LEO program.

Little savings were generated from activities with lighting systems or vehicles. Though opportunities for savings do exist, streetlighting tends to be a highly political issue focused on public safety concerns. Some of the LEOs also worked with vehicles, but found that they spent far more time than the resulting savings warranted.

Following the formal close of the Phase I field test in June of 1985, twelve of the seventeen participants continued to support an energy management program. Six of the governments continued their LEO program as originally designed, with some enhancements. In one government the LEO now also serves as a residential energy auditor and in another the LEO performs commercial and industrial energy audits. Both of these governments also serve as municipal utilities. Another one of the cities is currently working as a field test sponsor in an AEC project demonstrating performance contracting. Six of the governments continued with a reduced level of activity maintaining their energy accounting systems and implementing some energy improvements. Five of the participants dropped the program all together with the primary reason being departure of the LEO for other employment. One of these cities intends to hire a new LEO this summer. In one case the LEO is now responsible for the county's solid waste management plan including Waste-to-Energy. Two of the cities that also operate as municipal utilities did not understand the value of a program that on the surface appeared to erode their revenue base and completely abandoned the program. Interestingly enough, all of the LEOs retained a connection with energy management - even those who were no longer functioning as Energy Officers. Those who are still LEOs continue to participate in regular AEC local government energy management workshops and will form the basis of a formal network of energy managers.

LESSONS LEARNED

Several lessons were learned during the first demonstration of the LEO concept. Organizations interested in replicating the AEC's Local Energy Officer Project and serving in a management role similar to AEC's may want to pay particular attention to these findings. These lessons can be subdivided into three categories including marketing and program design issues, characteristics of an effective LEO, and the nature of needed government support.

Marketing and Program Design

The salary guarantee effectively moves the risk of performance from the government to the sponsoring agency. Even though the salary guarantee minimizes the risk to the government, a substantial financial risk can be imposed on the sponsoring agency. Therefore, the program must be structured to minimize the risk while still responding to the needs of the participating government. Specifically, the government must demonstrate a potential for savings, the amount of guaranteed time must be coordinated with the energy budget and the potential for savings, and a strong emphasis must be placed on implementation.

In any program providing an incentive such as the salary guarantee that is contingent upon energy savings, the amount of staff time that the government can justify must be determined from an analysis of the total energy budget. The percentage of time must be prorated dependent on the size of the energy budget. With average achieved savings of 2.0% of the total energy budget, including vehicle fuels, it is difficult to justify hiring a full-time LEO in a North Carolina government with an energy bill of less than \$1 million. We have used the following formula to derive the percentage of staff time acceptable for an LEO salary guarantee:

$$\% \text{ Time} = \frac{(\text{Annual Energy Budget})(0.02)}{\text{Annual Salary Guarantee}}$$

As another rule of thumb, the two year salary guarantee should fall in a range equivalent to 3-5% of the total annual energy budget.

More detailed analysis of the potential for savings is required as well. If the government is already operating efficient facilities, the Energy Officer will have difficulty finding opportunities to save an amount equivalent to the salary guarantee. Prior to signing a contract with the local government, the sponsoring agency needs a sense of the government's energy expenditures and type of facilities. Energy accounting information detailing the performance of the facilities is the best method for analyzing the potential for savings. However, most governments do not have this information collected prior to the inception of the program. Without this detailed information, judgement must be made based on knowledge of current and historical energy management activities.

"Energy" is not always a high priority item, and can be easily moved to the bottom of the stack by managers, budget officers, and maintenance crews. Therefore, the contract must be structured carefully to ensure implementation and the continual assignment of the LEO to energy duties. A provision for renegotiation of the guarantee should circumstances, such as a lack of implementation, make achievement of the guaranteed savings impossible is vital to reducing the risk to the sponsoring agency. In the first demonstration, several of the guarantees were renegotiated. In one instance, the guarantee was renegotiated to reflect a temporary vacancy in the position. In another case, the guarantee was reduced when the city closed down their major energy user, the water plant. Two guarantees were dropped because the governments failed to implement the recommendations quickly.

In addition to the structure of the contract for the salary guarantee, other issues of program design were evident during the course of the first demonstration. Ongoing detailed technical assistance in energy engineering and accounting, both on-site and by telephone, is essential. Most of the LEOs had no previous training in energy engineering and relied heavily on the technical assistance that was provided by the engineering firm under contract to the AEC. This method of providing assistance was extremely expensive (\$5400 per government for two years), somewhat inefficient for AEC management purposes, and not conducive to the building of local capacity. Other sources of assistance included the state Energy Division and local utility representatives. Periodic workshops, meetings, and newsletters were extremely useful as information sharing tools. As the Energy Officers became more acquainted with their duties in the second year of the program, the need for outside assistance diminished.

Each Energy Officer was required to compile a three year historical data base of energy consumption and cost data for each facility and to update this information on a monthly basis. This information is vital to the AEC's calculations of the actual savings to determine achievement of the salary guarantee. However, the considerable time and effort devoted to energy accounting directly benefits each government. The savings in energy dollars from switching rates, discontinuing unused accounts, and detection of billing errors or inappropriately billed accounts garnered over one-half of the total savings. Without accurate tracking of billing data, there is no reasonable method for detecting these opportunities for savings.

Accurate calculation of energy cost savings is complicated, requiring substantial effort. There are a variety of accepted methods for calculating actual savings. Since the salary guarantee is structured around actual savings, one method must be chosen and agreed upon by all participating parties. The method chosen by the AEC calculates savings for each of seven different types of facilities dividing energy savings into six categories including conservation, fuel switching, rate schedule changes, billing errors, facility closure, and other. Where appropriate, corrections are made for weather and changes in occupancy, schedule, square footage, and equipment. The dollar savings are calculated using the current and base consumption as well as KW demand and the current applicable rate schedules. The actual rate schedules as opposed to the average cost per unit of energy are used to account for changes in demand and to better reflect the actual change in the energy bills.

Characteristics of the Successful LEO

The most important traits for a successful LEO are persistent follow-up to ensure project completion and the ability to communicate with diverse groups including clerical, maintenance, finance, and management personnel. Of the ten LEOs involved in the first demonstration only one was a trained mechanical engineer. Other LEOs had planning, maintenance, or general management experience with local governments. The experience of the project has shown that some degree of training or experience in evaluating structural characteristics and energy consuming systems, or access to personnel to assist in that function, is essential. Other characteristics of the successful LEO include an understanding of the structure and functions of the specific local government, thoroughness of documentation including energy accounting ledgers and savings calculations, and a personal commitment to saving energy.

Government Support

A program designed to overcome the barriers to energy management must still pass hurdles presented to any new local government program. Most notably, the program must fit within the accepted methods of operations used by the local government.

For optimum results, an LEO program should be planned to coincide with the beginning of the local government fiscal year. Traditionally, local governments begin all new programming when they receive funding. New programs do not receive the full complement of possible support, including financial support, when they are begun mid-year.

In order to have a successful energy management program, a local government must be willing to commit some financial resources for the recommended energy improvements. Most of the participants were able to find funds for the low cost improvements. Typical sources included special line items for energy efficiency improvements and departmental maintenance funds. In a few cases the refunds accrued from the detection of billing errors were set aside for improvements. One city that maintained a separate account for rate increases allowed the funds to be used for energy improvements. For two years, the savings generated from improvements with quick paybacks offset annual rate increases of 8 to 10%. A few of the cities are currently exploring the possibility of using performance contracting to finance more costly packages of improvements for some of their larger buildings and wastewater treatment plants. Though local governments have typically listed funding for improvements as a barrier to energy management, very few of the LEOs had trouble lining up the necessary capital for implementation. The government officials found the detailed and unbiased information presented by the LEO to be sufficient justification.

The LEO project is based on the importance of a central contact with city and county governments. However, energy use is not isolated within one department or function of government operations. An in-house energy manager must work closely with personnel in all elements of government. Just as expenditures of energy involve the decisions of many persons, actions to control or change the use of energy require the input or agreement of all parties involved. Therefore, LEOs must involve as many as possible of the government's employees in the energy management program. Those LEOs who trained others to be responsible for energy accounting and included maintenance personnel in the design of improvements developed programs that produced significant savings and were able to function with minimal support from the LEO. In one city that strongly supports energy management but depended on the LEO to conduct all projects, the departure of the LEO has halted the program completely.

In addition to the support of line employees, the support of top management is vital to program success. Where this support was not forthcoming, the LEO had difficulty meeting the salary guarantee. Managers must be willing to promote the program to all employees, authorize the activities of the Energy Officer, and provide financial support for the improvements. Those LEOs who were located in the City Manager's Office or the Budget Office were the most successful since they had more direct access to top management. However, LEO's who were located in the maintenance division were also successful since they had direct access to those who were responsible for implementing the energy improvements and operating and maintaining the energy consuming facilities.

In order to garner the support of top management and line employees, the successful LEO must be willing to mold his or her activities into the current patterns of operations as much as possible. Some of the LEOs defined their role more as a facilitator. They tracked energy consumption and costs with the energy accounting system and made recommendations for improvements but did not become involved in the actual implementation. Others saw themselves as directly responsible for any

improvements that were made and could actually be found changing the light bulbs. Neither of the roles appears to be better than the other; with success depending on how well the Energy Officer matched his or her general responsibilities to the personality of the particular local government.

FUTURE DIRECTIONS

With the experiences acquired during the first demonstration with seventeen local governments, the model was modified slightly before being tried with thirteen additional governments. More emphasis has been placed on screening each participant for savings potential. Each salary guarantee has been set according to the amount of LEO time that the energy budget can theoretically support. The contract for the salary guarantee was rewritten to require the government to implement measures with a total estimated savings equivalent to the salary guarantee within four months of beginning the program. Increased statewide visibility of the program is strengthening the support and commitment of each government.

The other major change involved bringing the technical assistance in-house instead of under contract with an engineering firm and encouraging the governments to rely more on local resources. This arrangement provides some hand-holding but should encourage greater development of the government's capacity to continue the program with little or no support from the AEC. In conjunction with this change in the provision of technical assistance, the governments are encouraged to use an energy accounting program provided by the state Energy Division. Since this program only collects one year of historical energy consumption and cost data, the requirement for a three year data base has been dropped to one year. The thirteen governments participating in the second demonstration are midway through the first year of their two year program with substantial energy improvements already implemented.

The AEC is currently beginning a project to market the concept of an in-house energy manager and other forms of local government energy management to other municipalities and counties across the state. Activities will include the development of a video, slideshow, and case study bulletins that will be used at regular meetings of local government employees. The AEC will also provide consultation to governments interested in establishing an energy management program. A formal training curriculum for use by the Institute of Government at UNC-Chapel Hill, a highly respected organization responsible for a variety of local government training, will also be developed so that energy managers can be trained on an ongoing basis. Training in energy management practices will also be provided within the context of general training courses for employees with duties that relate to energy use, such as maintenance supervisors, finance officers, managers, and purchasing agents.

Through this latest project, the AEC hopes to develop the resources needed to support local government energy management with minimal assistance from the AEC. No salary guarantees will be offered to additional governments. The AEC wishes to determine if the success of the thirty participants in the two field tests will convince the remaining municipalities and counties that energy management does save money. If this barrier still exists, the AEC will encourage the institutionalization of the salary guarantee by an appropriate organization such as the state energy office or a local government organization.

CONCLUSIONS

To reap the opportunities for responsible and effective fiscal management afforded by energy management, local governments need a strong incentive that reduces the financial risks associated with

energy management, overcomes the difficulty in approving new positions, and reverses the lack of conviction that energy management results in actual dollar savings. The salary guarantee has proven to be extremely effective as an incentive for overcoming these barriers. However, the incentive must be accompanied by a comprehensive program that fits with the current operational patterns of the local government. The AEC's experience with the Local Energy Officer model has demonstrated the success of a system that centralizes energy responsibilities with one position and encourages strong involvement from line managers. Technical assistance and training enhance the ability to identify and implement the many opportunities for saving energy dollars.

In addition to designing a comprehensive program, the sponsoring agency must provide substantial and flexible support. The contract between the agency and participating government must be clear in the delineation of responsibilities with a strong commitment made for implementation. Visibility and publicity for the program will encourage the support of the top management and line employees within each government. Above all, the sponsoring agency must be willing to adapt to the needs of the municipality or county.

Several North Carolina governments have requested assistance in establishing energy management programs and many states are interested in incorporating the Local Energy Officer model. TVA recently began a pilot project entitled "The County Energy Partnership Project" and the Florida Governor's Energy Office and the California Energy Commission are also working to adopt the model. In these times of federal budget cuts and reduced tax opportunities, local governments need methods for reducing the expense side of the ledger. Energy management is one of the more effective tools. With its focus on comprehensiveness backed with an incentive, the Local Energy Officer model is one of the more successful methods for institutionalizing local government energy management.

Notes

1. Cigler, Beverly A. "Organizing for Local Energy Management: Early Lessons," Public Administration Review, Volume 41, Number 4, pp. 470-479. July/August 1981.
2. The Synectics Group, Inc. An Evaluation of the Institutional Conservation Program: Final Report. Results of On-Site Analysis. Washington, DC. April 30, 1983.