SCHOOLS/LOCAL GOVERNMENT ENERGY MANAGEMENT PROGRAM

For

ANSON
GENERAL HOSPITAL

Anson, Texas

Energy Efficient Partnership Service
of
COMPTROLLER of the STATE of TEXAS
STATE ENERGY CONSERVATION OFFICE
111 E. 17th Street
Austin, Texas 78774

Professional Engineering Services By:

ESA ENERGY SYSTEMS ASSOCIATES, Inc
100 East Main Street, Suite 201
Round Rock, Texas 78664
(512) 258-0547

July 14, 2009

James W. Brown, P.E.
Texas Registration # 51926

ESA-Energy Systems Associates, Inc.
F-4882

Table of Contents

		Page Number
1.0	**Executive Summary**	1-2
2.0	**Energy Assessment Procedure**	3
3.0	**Campus Description**	3-5
4.0	**Energy Performance Indicators**	6-7
5.0	**Utilities Rate Schedule Analysis**	8-9
6.0	**Recommendations**	
	A. Maintenance and Operations Projects	10
	B. Capital Expense Projects	10-11

APPENDICES:

I.	**Summary of Funding and Procurement Options**	12-20
II.	**Sample Resolution: SB 12 / HB 3693**	21-22
III.	**Electric Utility Rate Schedule and Billing**	23-25
IV.	**Natural Gas Utility Rate Schedule and Billing**	26
V.	**Utilities Consumption History**	27-28
VI.	**Energy Policy (Existing)**	29-30
VII.	**Preliminary Energy Assessment Service Agreement**	31-32
VIII.	**Texas Energy Managers Association (TEMA)**	33-34
IX.	**Utility Charts on Diskette**	35

1.0 EXECUTIVE SUMMARY:

This **Energy Efficient Partnership Service** is provided to public school districts and hospitals as a portion of the state's ***Schools/ Local Government Energy Management Program***; a program sponsored by the **State Energy Conservation Office (SECO)**, a division of the **State of Texas Comptroller of Public Accounts**.

Program Administrator:	Glenda Baldwin
Phone:	512-463-1731
Address:	State Energy Conservation Office LBJ State Office Building 111 E. 17th Street Austin, Texas 78774

The service assists these public, non-profit institutions to take basic steps towards energy efficient facility operation. Active involvement in the partnership from the entire administration and staff within the agencies and institutions is critical in developing a customized blueprint for energy efficiency for their facilities.

The **SECO** office received a request for technical assistance from *Ted Matthews*, Administrator for **Anson General Hospital**. **SECO** responded by sending ESA **Energy Systems Associates, Inc.**, a registered professional engineering firm, to prepare this preliminary report for the hospital campus. This report is intended to provide support for the hospital district as it determines the most appropriate path for facility renovation, especially as it pertains to the heating and cooling systems. It is our opinion that significant decreases in annual energy costs, as well as major maintenance cost reductions, can be achieved through the efficiency recommendations provided herein.

This study has focused on energy efficiency and systems operations. To that end, an updated analysis of the utility usage and costs for **Anson General Hospital,** (hereafter known as *Hospital*), was completed by ESA **Energy Systems Associates, Inc**., (hereafter known as *Engineer*), to determine the annual energy cost index, (ECI), and energy use index, (EUI), for each campus. A complete listing of the Base Year Utility Costs and Consumptions are provided in Appendix V of this report.

Following the utility analysis and a preliminary consultation with Mr. Garza of the Hospital Maintenance staff, a walk-through energy analysis was conducted for the Hospital. The Clinic facilities were not surveyed at this time.

Specific findings of this survey and the resulting recommendations for both low cost M&O [maintenance and operation] procedures, as well as cost-effective capital expense energy retrofit installations are identified in Section 6.0.

Financing for these recommended projects may be obtained from any of the programs discussed in Appendix 1 "Funding and Procurement Options," but our initial suggestion is that the district consider the SECO administered *LoanSTAR Loan Program*. This program allows school and hospital districts to borrow up to *$5 million dollars* at a *3% rate of interest*, with allowance of up to *ten years* for loan repayment.

SUMMARY TABLE:

Recommended Project	Estimated Annual Energy Cost Avoidance	Estimated Installation Cost	Predicted Simple Payback Period (Years)
Option A Lighting Renovation	$ 5,000	$25,000	5
Option B Lighting Renovation	$ 8,000	$48,000	8

(See Section 6.0 for a detailed description of each recommended project.)

Although *additional savings* from reduced maintenance expenses are anticipated, these savings projections are not included in the estimates provided above. As a result, the actual Return-On-Investment, (ROI), for this retrofit program should be even faster than noted within these calculations.

There are additional resources available to **Anson General Hospital** that may address some energy consumption concerns:

1. SECO is sponsoring a State-wide Energy Manager Program that may involve collaboration of energy management duties and personnel between the local government offices and school districts for rural Texas communities.
2. SECO may sponsor energy management and maintenance personnel training seminars for rural Texas communities.
3. ESA can offer presentations to the Hospital Board as well as technical assistance with energy management questions.

These issues are not included in the savings or the implementation cost estimates within this report. Should *Hospital* desire a more complete district analysis, a discussion with Glenda Baldwin, **SECO**'s program administrator for ***Schools/Local Government Energy Management Program*** is recommended.

Our final "summary" comment is that **SECO** views the completion and presentation of this report as a continuance of our relationship with **Anson General Hospital**. We hope to be ongoing partners in assisting you to implement the recommendations listed in this report. Please call us if you have further questions or comments regarding the Energy Management issues within the district.

Prepared By: ESA Energy Systems Associates, Inc. / James W. Brown, P.E. / (512) 258-0547

2.0 ENERGY ASSESSMENT PROCEDURE:

Involvement in this on-site analysis program was initiated through completion of a Preliminary Energy Assessment Service Agreement. This PEASA serves as the agreement to form a "partnership" between the client and the State Energy Conservation Office, (**SECO**), for the purposes of energy costs and consumption reduction within owned and operated facilities.

After receipt of the PEASA, an on-site visit was conducted by the professional engineering firm contracted by **SECO** to provide service within that area of the state. A summary of ***Anson General Hospital's*** most recent twelve months of utility bills was provided to the **Engineer** for the preliminary assessment of the Energy Performance Indicators. The **Engineer,** accompanied by the *Hospital* staff, then toured the facilities to evaluate changes in maintenance, operations, and/or equipment which would produce potential savings in energy consumption and cost.

SECO assisted Anson General Hospital by providing an Energy Partnership Survey in 2003. At the time, the Hospital's EUI was 94,654 BTUs /s.f./year and the ECI was $1.45 per square foot. Recommendations included replacing the existing rooftop units and renovating the T12 lighting system with T8 lamps and electronic ballasts. The Hospital has replaced the HVAC equipment and is currently applying for a grant to try to renovate the T12 lighting system.

3.0 CAMPUS DESCRIPTIONS:

Anson General Hospital is located on one campus in 3 separate buildings: one housing the Hospital, one a separate Conference Facility and the other a Clinic.

General Notes HVAC:

The Hospital has a combination of systems in the building. Rooftop units serve larger areas while the patient rooms have a mixture of fan coil units and through-the-wall units. All of the units are controlled with conventional thermostats. Programmable thermostats do not offer significant advantages over conventional thermostats in a 24/7 facility. The unit that serves the Nurse's Station, however, has its thermostat located in the corridor across from the Nurse's Desk. Maintenance reports difficulty with the nursing staff adjusting this unit to their own setpoints and ignoring the energy policy setpoints desired by Administration. *We recommend that the Hospital install a heavy-duty metal locking thermostat cover to prevent staff from tampering with the setpoints.*

As mentioned previously, the rooftop units have all been recently replaced. The units did not receive adequate hail guards when the new units were installed and some of the units have already received hail damage during a relatively minor hail storm earlier this year. Having just 10% of the coil fins crushed can result in up to 30% loss of unit efficiency. *Therefore we recommend the Hospital comb the damage from the existing fins and install high quality hail guards on all of the new units to prevent future damage that will hurt the operational efficiency of the system.*

Weatherstripping at exterior doors and the vestibule is in poor condition or missing entirely. *We recommend that the Hospital install new weatherstripping at these locations.*

The Hospital has recently replaced the main water heater for the building. The insulation that was removed to re-pipe the new unit was never replaced after the new heater was installed. *The majority of energy losses in a hot water system occur at the water piping and therefore the insulation should be replaced at this location.*

General Notes Lighting:

The lighting system at Anson consists of a combination of surface mount and recessed T12 fluorescent fixtures in the larger spaces with incandescent fixtures in small restroom and storage areas. The recessed linear fluorescent fixtures are predominantly located in the corridors around the building.

Surface mount fixtures are attached to one of three common ceiling types:

1. Acoustical tile ceiling with free space between the drop ceiling and the hard deck surfaces sufficient to allow for recessed fixtures.
2. Acoustical tile ceiling with approximately 6" of free space between the drop ceiling and hard deck surfaces which made it impossible to install recessed fixtures in the past, and
3. Acoustical ceiling material that is glued directly to the hard deck surface above it, or gypsum board ceiling material, which necessitates stem-mounted or surface-mounted fixtures be used in the space.

New low-profile offerings from lighting manufacturers may allow the use of recessed fixtures in the 6" of free space available in areas that surface-mounted fixtures were required to be installed several years ago.

The recessed fixtures in the corridors are in generally good condition and are suitable to be retrofit with T8 lamps and electronic ballasts. A general cleaning of the fixture should be performed at the time of the retrofit to insure minimal light loss from the fixture from dirty lenses and reflective materials.

The surface-mounted fixtures in the other spaces are not in generally good condition. Many lenses are broken or missing and the cost to replace lenses and perform the T8 retrofit are often equal to the cost of replacing the fixtures with new units. *We recommend that the surface-mount fixtures be replaced with recessed fixtures where existing ceiling conditions allow and new surface-mount fixtures where adequate clearance above the ceiling does not exist.*

Given the fact that T8 fixtures offer approximately 20% more light output while consuming about 18% less energy than T12 fixtures, there are opportunities in many spaces to install 3-lamp T8 fixtures in locations where 4-lamp T12 fixtures currently exist. The Illumination Engineering Society of North America (IESNA) has recommendations for proper illumination levels required in each area of Hospital facilities. We recommend the Hospital's Lighting Design Engineer evaluate the light level required in each space and supply only the fixtures required to produce those levels. The Break Room, for example, currently has four each 4-lamp T12 fixtures surface-mounted over a 2x2 ceiling grid. This area would be adequately illuminated with four new 2x2 recessed F17T8 fixtures. The recessed fixtures would offer a cleaner aesthetic appearance to the space and the F17T8 laps would offer a higher quality of light at significant energy savings over the existing T12 system.

Some spaces offer other opportunities for energy savings. The Kitchen, for example, has six of its twelve light fixtures located immediately in front of large windows. The artificial light from these fixtures is largely wasted because the natural light from the windows is more than adequate to illuminate the space. We recommend that these six fixtures be re-circuited and supplied a separate switch so that they may be turned off during the daytime hours, yet remain available for any night Kitchen work.

An alternative strategy for the lighting renovation at the Hospital would be to simply retrofit the existing T12 fixtures with T8 lamps and electronic ballasts. This plan will minimize the cost of the renovation, lower the overall payback for the project, and offer the Hospital the opportunity to replace damaged or poor fixture conditions after the money required to repair them has been saved.

In regards to the incandescent fixtures, we recommend that all incandescent lamps be replaced with compact fluorescent lamps (CFLs) immediately with future consideration given to new LED or fluorescent fixtures for the spaces as future budgets allow.

There are approximately 20 incandescent exit fixtures located throughout the corridors in the building. *We recommend that the Hospital retrofit the lamps in these fixtures with LED replacement lamps or replace the fixtures with new LEC fixture units to greatly improve the reliability and life of the lamps used in the system and significantly reduce the energy consumption of these units.*

During the survey, the staff expressed interest in using motion sensors to control lighting in areas with part-time occupancy in the building. This strategy would work well if the control devices used are designed to fail in the “on” condition so that no area of the hospital could be dark until the failed occupancy control device is repaired. There are many areas of the Administration portion of the Main Building which are not likely occupied during the overnight hours and these control devices would ensure that unnecessary light fixtures remained off when not needed.

During the survey, it was noted that the three vending machines in the general public snack area do not have occupancy control devices installed. These motion sensors turn off the advertisement lighting at all times that no activity is sampled in the space and cycles the compressor on the beverages or foods so that they do not get too warm, yet do not run all of the time as they do in their current state of programming. *We recommend that the Hospital consider installing these vending machine controllers on all vending machines in the facility.*

4.0 ENERGY PERFORMANCE INDICATORS:

In order to easily assess energy utilization and current levels of efficiency, there are two key "Energy Performance Indicators" calculated within this report.

1. **Energy Utilization Index**

The Energy Utilization Index (EUI) depicts the total annual energy consumption per square foot of building space, and is expressed in "British Thermal Units" (BTU's). To calculate the EUI, the consumption of electricity and gas are first converted to equivalent BTU consumption via the following formulas:

ELECTRICITY Usage
[Total KWH /yr] x [3413 BTUs/KWH] = __________ BTUs / yr

NATURAL GAS Usage
[Total MCF/yr] x [1,030,000 BTUs/MCF] = ________ BTUs / yr

After adding the BTU consumption of each fuel, the total BTU's are then divided by the building area.

EUI = [Electricity BTU's + Gas BTU's] divided by [Total square feet]

2. **Energy Cost Index**

The Energy Cost Index (ECI) depicts the total annual energy cost per square foot of building space. To calculate the ECI, the annual costs of electricity and gas are totaled and divided by the total square footage of the facility:

ECI = [Electricity Cost + Gas Cost] divided by [Total square feet]

These indicators may be used to compare the facility's current cost and usage to past years, or to other similar facilities in the area. Although the comparisons will not provide specific reasons for unusual operation, they serve as indicators that problems may exist within the energy consuming systems.

THE CURRENT ENERGY PERFORMANCE INDICATORS FOR :

ANSON GENERAL HOSPITAL

CAMPUS	ENERGY UTILIZATION INDEX (EUI) (Btu/sf-year)	ENERGY COST INDEX (ECI) ($/sf-year)
Hospital	84,888	$1.99
Average 25 Bed Tx Hospital:	*227,800*	*$2.68*

Comparison to Average: From the **EUI** and **ECI** comparisons with other school facilities *within the region*, several energy related issues are apparent:

2008 EUI Comparison:
The Hospital is **63% lower** than the average 25 Bed Texas Hospital for energy consumption.

2008 ECI Comparison:
The Hospital **26% lower** than the average 25 Bed Texas Hospital for energy costs.

5.0 RATE SCHEDULE ANALYSIS:

RETAIL ELECTRIC PROVIDER: Direct Energy

Energy Charge: = $0.0924/kWh

TRANSMISSION AND DISTRIBUTION (T&D): AEP Texas North

Electric Rate: Secondary Service > 10 kW

I.	TRANSMISSION AND DISTRIBUTION CHARGES:		
	Customer Charge	=	$26.00 per IDR meter
	Customer Charge	=	$4.25 per Non-IDR meter
	Metering Charge	=	$35.00 per IDR meter
	Metering Charge	=	$18.68 per Non-IDR meter
	Transmission System Charge (IDR Meter)	=	$1.953 per 4CP kW
	Transmission System Charge (Non-IDR Meter)	=	$1.245 per NCP kW
	Distribution System Charge	=	$3.21 per NCP kW
II.	SYSTEM BENEFIT FUND	=	$0.000657 per kWh
III.	TRANSITION CHARGES	=	$0.000277/kWh
IV.	NUCLEAR DECOMMISSIONING CHARGE	=	Not Applicable
V.	TCRF (IDR Meter)	=	$0.358804/4CP kW
	TCRF (Non-IDR Meter)	=	$0.243181/ kW
VI.	EXCESS MITIGATION CREDIT	=	not applicable
VII.	STATE COLLEGE DISCOUNT	=	not applicable
VIII.	COMPETITIVE METERING CREDIT	=	$2.17 per month
IX.	Rate Case Surcharge Rider	=	$0.000039 per kWh

Average Savings for consumption

= $0.0924/kWh + $0.000657/kWh + 0.000277/kWh + 0.000039/kWh= **$0.093373/kWh**

Average Savings for demand = $1.245 + $3.21 + $0.243181 **= $4.698181/kW****

** This number is a generalization of average cost per kW because the rate schedule from Oncor utilizes three (3) different types of demand for the calculation of the utility bill:

1. NCP kW: Peak demand during 15 minute interval of current billing cycle
2. 4CP kW: Average demands of June, July, August and September of previous calendar year; usually only applied to IDR metered accounts
3. DS (Distribution System) Billing kW: Ratchet demand representing higher of two calculations: 80% of peak demand in last 11 months or current NCP kW

GAS UTILITY: **Atmos Energy**

GAS RATE: Not available; Cost/mcf determined from billing.

$9,056 was spent to purchase 945MCF of natural gas during the billing cycle.
$9,056 / 945MCF = $9.58 per MCF

Total Average Savings per Mcf Natural Gas Consumption = **$9.58/mcf**

6.0 RECOMMENDATIONS:

A. MAINTENANCE AND OPERATIONS PROCEDURES

1. Weather-stripping around the exterior doors needs to be installed, and around all operable portions of the windows.
   Several doors checked during the survey were leaking air into the building. It is suggested that the Maintenance staff be allowed to install/replace weather protection on all windows and doors to minimize this uncontrolled outside load.

2. Comb and repair coil fins on new HVAC equipment and install heavy-duty hail guards to protect units from future damage.
   Just 10% of the fins crushed can result in up to 30% loss of unit efficiency.

3. Install heavy-duty metal locking thermostat cover on Nurse's Station thermostat to prevent unauthorized programming changes to unit.

4. Install water pipe insulation at new water heaters where insulation was removed to re-pipe new unit.
   The majority of energy losses in a hot water system occur through the hot water piping.

5. Replace existing incandescent exit fixture lamps with LED lamps or replace the fixtures with new LEC fixtures.

B. CAPITAL EXPENSE PROJECTS

<u>Recommended Replacement Projects:</u>

Lighting System:

The existing lighting system consists of T12 and incandescent fixtures. We recommend that the fixtures be renovated with T8 lamps, electronic ballasts and compact fluorescent lamps in one of the two following project scopes:

A. General retrofit of the existing fixtures.
   In this project, all of the existing T12 fluorescent fixtures are retrofit with T8 lamps and electronic ballasts in their current condition. All incandescent lamps are replaced with compact fluorescent lamps. This scope will produce the lowest overall project payback and allow the Hospital to reserve money obtained through energy savings to address fixture replacement in the near future.

Estimated Installed Cost	=	$ 25,000
Estimated Energy Cost Savings	=	$ 5,000
Simple Payback Period	=	5 Years

B. Renovation of existing lighting system.
This project replaces the majority of the existing fixtures with new T8 fixtures. Several of the existing surface-mount fixtures can be replaced with recessed low-profile fixtures that will significantly improve the aesthetic appearance of the spaces in the building and maximize the potential energy savings available in the lighting system by supplying only the proper amount of artificial illumination required in each space. Areas where the condition of the existing fixtures are satisfactory may be retrofit as per project scope "A" and minimize the total cost for the project by not requiring 100% new fixtures in the design. Incandescent fixtures in the patient restrooms may be replaced with LED or fluorescent fixtures that produce a brighter, higher quality of light and provide a safer environment for the staff and patients.

Estimated Installed Cost	=	$ 48,000
Estimated Energy Cost Savings	=	$ 6,000
Simple Payback Period	=	8 Years

Financing:
It is the Hospital's intent to utilize grant funds to perform the recommended project(s). If the grant is not available, we have summarized other funding options available to the Hospital in Appendix I.

APPENDIX I

SUMMARY OF FUNDING AND PROCUREMENT OPTIONS

SUMMARY OF FUNDING OPTIONS FOR CAPITAL EXPENDITURE PROJECTS

Several options are available for funding retrofit measures which require capital expenditures.

LoanSTAR Program:
The Texas LoanSTAR program is administered by the State Energy Conservation Office (SECO). It is a revolving loan program available to all public school districts in the state as well as other institutional facilities. SECO loans money at 3% interest for the implementation of energy conservation measures which have a combined payback of eight years or less. The amount of money available varies, depending upon repayment schedules of other facilities with outstanding loans, and legislative actions. Check with Theresa Sifuentes of SECO (512-463-1896) for an up-to-date evaluation of prospects for obtaining a loan in the amounts desired.

TASB (Texas Association Of School Boards) Capital Acquisition Program:
TASB makes loans to school districts for acquiring personal property for “maintenance purposes”. Energy conservation measures are eligible for these loans. The smallest loan TASB will make is $100,000. Financing is at 4.4% to 5.3%, depending upon length of the loan and the school district’s bond rating. Loans are made over a three year, four year, seven year, or ten year period. The application process involves filling out a one page application form, and submitting the school district’s most recent budget and audit. Contact Cheryl Kepp at TASB (512-467-0222) for further information.

Loans On Commercial Market:
Local lending institutions are another source for the funding of desired energy conservation measures. Interest rates obtainable may not be as attractive as that offered by the LoanSTAR or TASB programs, but advantages include “unlimited” funds available for loan, and local administration of the loan.

Leasing Corporations:
Leasing corporations have become increasingly interested in the energy efficiency market. The financing vehicle frequently used is the municipal lease. Structured like a simple loan, a municipal leasing agreement is usually a lease-purchase agreement. Ownership of the financed equipment passes to the district at the beginning of the lease, and the lessor retains a security interest in the purchase until the loan is paid off. A typical lease covers the total cost of the equipment and may include installation costs. At the end of the contract period a nominal amount, usually a dollar, is paid by the lessee for title to the equipment.

Bond Issue:
The may choose to have a bond election to provide funds for capital improvements. Because of its political nature, this funding method is entirely dependent upon the mood of the voters, and may require more time and effort to acquire the funds than the other alternatives.

SUMMARY OF PROCUREMENT OPTIONS
FOR CAPITAL EXPENDITURE PROJECTS

State Purchasing:
The General Services Commission has competitively bid contracts for numerous items which are available for direct purchase by school districts. Contracts for this GSC service may be obtained from Sue Jager at (512) 475-2351.

Design/Bid/Build (Competitive Bidding):
Plans and specifications are prepared for specific projects and competitive bids are received from installation contractors. This traditional approach provides the district with more control over each aspect of the project, and task items required by the contractors are presented in detail.

Design/Build:
These contracts are usually structured with the engineer and contractor combined under the same contract to the owner. This type team approach was developed for fast-track projects, and to allow the contractor a position in the decision making process. The disadvantage to the district is that the engineer is not totally independent and cannot be completely focused upon the interest of the district. The district has less control over selection of equipment and quality control.

Purchasing Standardization Method:
This method will result in significant dollar savings if integrated into planned facility improvements. For larger purchases which extend over a period of time, standardized purchasing can produce lower cost per item expense, and can reduce immediate up-front expenditures. This approach includes traditional competitive bidding with pricing structured for present and future phased purchases.

Performance Contracting:
Through this arrangement, an energy service company (ESCO) using in-house or third party financing to implement comprehensive packages of energy saving retrofit projects. Usually a turnkey service, this method includes an initial assessment of energy savings potential, design of the identified projects, purchase and installation of the equipment, and overall project management. The ESCO guarantees that the cost savings generated will, at a minimum, cover the annual payment due over the term of the contract. The laws governing Performance Contracting for school districts are detailed in the Texas Education Code, Subchapter Z, Section 44.901. Senate Bill SB 3035, passed by the seventy-fifth Texas Legislature, amends some of these conditions. Performance Contracting is a highly competitive field, and interested districts may wish to contact Theresa Sifuentes of State Energy Conservation Office, (SECO), at 512-463-1896 for assistance in preparing requests for proposals or requests for qualifications.

Solution Center

How to Finance Your Energy Program

Cost and financing issues are pivotal factors in determining which energy-efficiency measures will be included in your final energy management plan. Before examining financing options, you need to have a reasonably good idea of the measures that may be implemented. For this purpose, you will want to perform cost/benefit analyses on each candidate measure to identify those with the best investment potential. This document presents a brief introduction to cost/benefit methods and then suggests a variety of options for financing your program.

Selecting a Cost/Benefit Analysis Method

Cost/benefit analysis can determine if and when an improvement will pay for itself through energy savings and to help you set priorities among alternative improvement projects. Cost/benefit analysis may be either a simple payback analysis or the more sophisticated life cycle cost analysis. Since most electric utility rate schedules are based on both consumption and peak demand, your analyst should be skilled at assessing the effects of changes in both electricity use and demand on total cost savings, regardless of which type of analysis is used. Before beginning any cost/benefit analyses, you must first determine acceptable design alternatives that meet the heating, cooling, lighting, and control requirements of the building being evaluated. The criteria for determining whether a design alternative is "acceptable" includes reliability, safety, conformance with building codes, occupant comfort, noise levels, and space limitations. Since there will usually be a number of acceptable alternatives for any project, cost/benefit analysis allows you to select those that have the best savings potential.

Simple Payback Analysis

A highly simplified form of cost/benefit analysis is called simple payback. In this method, the total first cost of the improvement is divided by the first-year energy cost savings produced by the improvement. This method yields the number of years required for the improvement to pay for itself.

This kind of analysis assumes that the service life of the energy-efficiency measure will equal or exceed the simple payback time. Simple payback analysis provides a relatively easy way to examine the overall costs and savings potentials for a variety of project alternatives. However, it does not consider a number of factors that are difficult to predict, yet can have a significant impact on cost savings. These factors may be considered by performing a life-cycle cost (LCC) analysis.

Simple Payback

As an example of simple payback, consider the lighting retrofit of a 10,000-square-foot commercial office building. Relamping with T-8 lamps and electronic, high-efficiency ballasts may cost around $13,300 ($50 each for 266 fixtures) and produce annual savings of around $4,800 per year (80,000 kWh at $0.06/kWh). This simple payback for this improvement would be

$$\frac{\$13{,}300}{\$4{,}800/\text{year}} = 2.8 \text{ years}$$

That is, the improvement would pay for itself in 2.8 years, a 36% simple return on the investment (1/2.8 = 0.36).

Life-Cycle Cost Analysis

Life-cycle cost analysis (LCC) considers the total cost of a system, device, building, or other capital equipment or facility over its anticipated useful life. LCC analysis allows a comprehensive assessment of all anticipated costs associated with a design alternative. Factors commonly considered in LCC analyses include initial capital cost, operating costs, maintenance costs, financing costs, the expected useful life of equipment, and its future salvage values. The result of the LCC analysis is generally expressed as the value of initial and future costs in today's dollars, as reflected by an appropriate discount rate.

The first step in this type of analysis is to establish the general study parameters for the

continued

How to Finance Your Energy Program *continued*

project, including the base date (the date to which all future costs are discounted), the service date (the date when the new system will be put into service), the study period (the life of the project or the number of years over which the investor has a financial interest in the project), and the discount rate. When two or more design alternatives are compared (or even when a single alternative is compared with an existing design), these variables must be the same for each to assure that the comparison is valid. It is meaningless to compare the LCC of two or more alternatives if they are computed using different study periods or different discount rates.

Decision makers in both the public and private sectors have long used LCC analysis to obtain an objective assessment of the total cost of owning, operating, and maintaining a building or building system improvement over its useful life. Nevertheless, an LCC analysis does require a good understanding of acceptable alternatives, useful life, equipment efficiencies, and discount rates.

Selecting the "Best" Alternatives

Generally, all project alternatives should be screened using simple payback analyses. A more detailed and costly LCC analysis should be reserved for large projects or those improvements that entail a large investment, since a detailed cost analysis would then be a small part of the overall cost. Both simple payback and LCC analyses will allow you to set priorities based on measures that represent the greatest return on investment. In addition, these analyses can help you select appropriate financing options:

- Energy-efficiency measures with short payback periods, such as one to two years, are economically very attractive and should be implemented using operating reserves or other readily available internal funds, if possible.
- Energy-efficiency measures with payback periods from three to five years may be considered for funding from available internal capital investment monies, or may be attractive candidates for third-party financing through energy service companies or equipment leasing arrangements.
- Frequently, short payback measures can be combined with longer payback measures (10 years or more) in order to increase the number of measures that can be cost-effectively included in a project. Projects that combine short- and long-term paybacks are recommended to avoid "cream-skimming" (implementing only those measures that are highly cost effective and have quick paybacks) at the expense of other worthwhile measures. A selected set of measures with a combination of payback periods can be financed either from available internal funds or through third party alternatives.

If simple payback time is long, 10 or more years, economic factors can be very significant and LCC analysis is recommended. In contrast, if simple payback occurs within three to five years, more detailed LCC analysis may not be necessary, particularly if price and inflation changes are assumed to be moderate.

Weighing Non-Cost Impacts

Some factors related to building heating, air conditioning, and lighting system design are not considered in either simple payback or LCC analyses. Examples include the thermal comfort of occupants in a building and the adequacy of task lighting, both of which affect productivity. A small loss in productivity due to reduced comfort or poor lighting can quickly offset any energy cost savings.

Conventional cost/benefit analyses also normally do not consider the ancillary societal benefits that can result from reduced energy use (e.g., reduced carbon emissions, improved indoor air quality). In some cases, these ancillary benefits can be assigned an agreed upon monetary value, but the values to be used are strongly dependent on local factors. In general, if societal benefits have been assigned appropriate monetary values by a local utility, they can be easily considered in your savings calculations. However, your team should discuss this issue with your local utility or with consultants working on such values in your area.

Finally, in any cost analysis, it can be very important to include avoided cost as part of the benefit of the retrofit. When upgrading or replacing building equipment, the avoided cost of maintaining existing equipment should be considered a cost savings provided by the improvement.

How to Finance Your Energy Program *continued*

Financing Mechanisms

Capital for energy-efficiency improvements is available from a variety of public and private sources, and can be accessed through a wide and flexible range of financing instruments. While variations may occur, there are five general financing mechanisms available today for investing in energy-efficiency:

- **Internal Funds.** Energy-efficiency improvements are financed by direct allocations from an organization's own internal capital or operating budget.
- **Debt Financing.** Energy-efficiency improvements are financed with capital borrowed directly by an organization from private lenders.
- **Lease or Lease-Purchase Agreements.** Energy-efficient equipment is acquired through an operating or financing lease with no up-front costs, and payments are made over five to ten years.
- **Energy Performance Contracts.** Energy-efficiency measures are financed, installed, and maintained by a third party, which guarantees savings and payments based on those savings.
- **Utility Incentives.** Rebates, grants, or other financial assistance are offered by an energy utility for the design and purchase of certain energy-efficient systems and equipment.

These financing mechanisms are not mutually exclusive (i.e., an organization may use several of them in various combinations). The most appropriate set of options will depend on the size and complexity of a project, internal capital constraints, in-house expertise, and other factors. Each of these mechanisms is discussed briefly below, followed by some additional funding sources and considerations.

Internal Funds

The most direct way for the owner of a building or facility to pay for energy-efficiency improvements is to allocate funds from the internal capital or operating budget. Financing internally has two clear advantages over the other options discussed below -- it retains internally all savings from increased energy-efficiency, and it is usually the simplest option administratively. The resulting savings may be used to decrease overall operating expenses in future years or retained within a revolving fund used to support additional efficiency investments. Many public and private organizations regularly finance some or all of their energy-efficiency improvements from internal funds.

In some instances, competition from alternative capital investment projects and the requirement for relatively high rates of return may limit the use of internal funds for major, standalone investments in energy-efficiency. In most organizations, for example, the highest priorities for internal funds are business or service expansion, critical health and safety needs, or productivity enhancements. In both the public and private sectors, capital that remains available after these priorities have been met will usually be invested in those areas that offer the highest rates of return. The criteria for such investments commonly include an annual return of 20 percent to 30 percent or a simple payback of three years or less.

Since comprehensive energy-efficiency improvements commonly have simple paybacks of five to six years, or about a 12 percent annual rate of return, internal funds often cannot serve as the sole source of financing for such improvements. Alternatively, however, internal funding can be used well and profitably to achieve more competitive rates of return when combined with one or more of the other options discussed below.

Debt Financing

Direct borrowing of capital from private lenders can be an attractive alternative to using internal funds for energy-efficiency investments. Financing costs can be repaid by the savings that accrue from increased energy-efficiency. Additionally, municipal governments can often issue bonds or other long-term debt instruments at substantially lower interest rates than can private corporate entities. As in the case of internal funding, all savings from efficiency improvements (less only the cost of financing) are retained internally.

Debt financing is administratively more complex than internal funding, and financing costs will vary according to the credit rating of the borrower. This approach may also be restricted by formal debt ceilings imposed by municipal

How to Finance Your Energy Program *continued*

policy, accounting standards, and/or Federal or state legislation.

In general, debt financing should be considered for larger retrofit projects that involve multiple buildings or facilities. When considering debt financing, organizations should weigh the cost and complexity of this type of financing against the size and risk of the proposed projects.

Lease and Lease-Purchase Agreements

Leasing and lease-purchase agreements provide a means to reduce or avoid the high, up-front capital costs of new, energy-efficient equipment. These agreements may be offered by commercial leasing corporations, management and financing companies, banks, investment brokers, or equipment manufacturers. As with direct borrowing, the lease should be designed so that the energy savings are sufficient to pay for the financing charges. While the time period of a lease can vary significantly, leases in which the lessee assumes ownership of the equipment generally range from five to ten years. There are several different types of leasing agreements, as shown in the sidebar. Specific lease agreements will vary according to lessor policies, the complexity of the project, whether or not engineering and design services are included, and other factors.

Energy Performance Contracts

Energy performance contracts are generally financing or operating leases provided by an Energy Service Company (ESCo) or equipment manufacturer. The distinguishing features of these contracts are that they provide a guarantee on energy savings from the installed retrofit measures, and they provide payments to the ESCo from the savings, freeing the customer from any need of up-front payments to the ESCo. The contract period can range from five to 15 years, and the customer is required to have a certain minimum level of capital investment (generally $200,000 or more) before a contract will be considered.

Under an energy performance contract, the ESCo provides a service package that typically includes the design and engineering, financing, installation, and maintenance of retrofit measures to improve energy-efficiency. The scope of these improvements can range from measures that affect a single part of a building's energy-using

Types of Leasing Agreements

Operating Leases are usually for a short term, occasionally for periods of less than one year. At the end of the lease period, the lessee may either renegotiate the lease, buy the equipment for its fair market value, or acquire other equipment. The lessor is considered the owner of the leased equipment and can claim tax benefits for its depreciation.

Financing Leases are agreements in which the lessee essentially pays for the equipment in monthly installments. Although payments are generally higher than for an operating lease, the lessee may purchase the equipment at the end of the lease for a nominal amount (commonly $1). The lessee is considered the owner of the equipment and may claim certain tax benefits for its depreciation.

Municipal Leases are available only to tax-exempt entities such as school districts or municipalities. Under this type of lease, the lessor does not have to pay taxes on the interest portion of the lessee's payments, and can therefore offer an interest rate that is lower than the rate for usual financing leases. Because of restrictions against multi-year liabilities, the municipality specifies in the contract that the lease will be renewed year by year. This places a higher risk on the lessor, who must be prepared for the possibility that funding for the lease may not be appropriated. The lessor may therefore charge an interest rate that is as much as 2 percent above the tax-exempt bond rate, but still lower than rates for regular financing leases. Municipal leases nonetheless are generally faster and more flexible financing tools than tax-exempt bonds.

Guaranteed Savings Leases are the same as financing or operating leases but with the addition of a guaranteed savings clause. Under this type of lease, the lessee is guaranteed that the annual payments for leasing the energy-efficiency improvements will not exceed the energy savings generated by them. The owner pays the contractor a fixed payment per month. If actual energy savings are less than the fixed payment, however, the owner pays only the small amount saved and receives a credit for the difference.

How to Finance Your Energy Program *continued*

infrastructure (such as lighting) to a complete package of measures for multiple buildings and facilities. Generally, the service provider will guarantee savings as a result of improvements in both energy and maintenance efficiencies. Flat-fee payments tend to be structured to maintain a positive cash flow to the customer with whom the agreement is made. With the increasing deregulation of conventional energy utilities, several larger utilities have formed unregulated subsidiaries that offer a full range of energy-efficiency services under performance agreements.

An energy performance contract must define the methodology for establishing the baseline costs and cost savings and for the distribution of those savings among the parties. The contract must also specify how those savings will be determined, and must address contingencies such as utility rate changes and variations in the use and occupancy of a building. While several excellent guidance documents exist for selecting and negotiating energy performance contracts, large or complicated contracts should be negotiated with the assistance of experienced legal counsel.

Utility Incentives

Some utilities still offer financial incentives for the installation of energy-efficient systems and equipment, although the number and extent of such programs appears to be decreasing as utility deregulation proceeds. These incentives are available for a variety of energy-efficient products including lighting, HVAC systems, energy management controls, and others. The most common incentives are equipment rebates, design assistance, and low-interest loans.

In general, the primary purpose of utility incentives is to lower peak demand; overall energy-efficiency is an important, but secondary consideration. Incentives are much more commonly offered by electric utilities than by natural gas utilities.

Additional Financing Sources and Considerations

State and Federal Assistance. Matching grants, loans, or other forms of financial assistance (in addition to those listed above) may be available from the Federal government or state governments. If your community is considering energy-efficiency improvements for public or assisted multifamily housing, your program could be eligible to receive assistance through various programs of the U.S. Department of Housing and Urban Development. A variety of state-administered programs for building efficiency improvements may also be available, some of which are funded through Federal block grants and programs. Federal assistance available through states include Federal block grants and State Energy Conservation Program funds. An example of individual state programs is the Texas LoanSTAR program, which provides low-interest loans for state agencies and schools.

Utility Assistance

Equipment Rebates. Some utilities offer rebates on the initial purchase price of selected energy-efficient equipment. The amount of the rebate varies substantially depending on the type of equipment. For example, a rebate of $.50 to $1 may be offered for the replacement of an incandescent bulb with a more efficient fluorescent lamp, while the installation of an adjustable speed drive may qualify for a rebate of $10,000 or more.

Design Assistance. A smaller number of utilities provide direct grants or financial assistance to architects and engineers for incorporating energy-efficiency improvements in their designs. This subsidy can be based on the square footage of a building, and/or the type of energy-efficiency measures being considered. Generally, a partial payment is made when the design process is begun, with the balance paid once the design has been completed and installation has commenced.

Low-Interest Loans. Loans with below-market rates are provided by other utilities for the purchase of energy-efficient equipment and systems. Typically, these low-interest loans will have an upper limit in the $10,000 to $20,000 range, with monthly payments scheduled over a two- to five-year period.

5

How to Finance Your Energy Program *continued*

Bulk Purchasing. Large organizations generally have purchasing or materials procurement departments that often buy standard materials in bulk or receive purchasing discounts because of the volume of their purchases. Such organizations can help reduce the costs of energy-efficiency renovations if their bulk purchasing capabilities can be used to obtain discounts on the price of materials (e.g., lamps and ballasts). While some locales may have restrictions that limit the use of this option, some type of bulk purchasing can usually be negotiated to satisfy all parties involved.

Project Transaction Costs. Certain fixed costs are associated with analyzing and installing energy measures in each building included in a retrofit program. Each additional building, for example, could represent additional negotiations and transactions with building owners, building analysts, energy auditors, equipment installers, commissioning agents, and other contractors. Similarly, each additional building will add to the effort involved in initial data analysis as well as in tracking energy performance after the retrofit. For these reasons, it is often possible to achieve target energy savings at lower cost by focusing only on those buildings that are the largest energy users. One disadvantage with larger buildings is that the energy systems in the building can be more difficult to understand, but overall, focusing on the largest energy users is often the most efficient use of your financial resources.

Direct Value-Added Benefits. The primary value of retrofits to buildings and facilities lies in the reduction of operating costs through improved energy-efficiency and maintenance savings. Nevertheless, the retrofit may also directly help address a variety of related concerns, and these benefits (and avoided costs) should be considered in assessing the true value of an investment. A few examples of these benefits include the improvement of indoor air quality in office buildings and schools; easier disposal of toxic or hazardous materials found in energy-using equipment; and assistance in meeting increasingly stringent state or Federal mandates for water conservation. Effective energy management controls for buildings can also provide a strong electronic infrastructure for improving security systems and telecommunications.

Economic Development Benefits. In addition to direct savings on operating costs and the added-value benefits mentioned above, investments in energy-efficiency can also support a community's economic development and employment opportunities. Labor will typically constitute about 60 percent of a total energy investment, and about 50 percent of equipment can be expected to be purchased from local equipment suppliers; as a result, about 85 percent of the investment is retained within the local economy. Additionally, funds retained in urban areas will generally be re-spent in the local economy. The Department of Commerce estimates that each dollar retained in an urban area will be re-spent three times. This multiplier effect results in a three-fold increase in the economic benefits of funds invested in energy-efficiency, without even considering the savings from lower overall fuel costs.

For more information contact the Rebuild America Clearinghouse at 252-459-4664 or visit www.rebuild.gov

Rebuild America
U.S. Dept. of Energy

6

APPENDIX II

[Sample]

Resolution for Senate Bill 12 / House Bill 3693

[SAMPLE]
ENERGY CONSUMPTION REDUCTION PLAN
for

____
(ISD)

____
(Date)

Mission Statement:
Recognizing our responsibility as Trustees of _________________, we believe that every effort should be made to conserve energy and natural resources. We also believe that energy efficient operations will reduce operating costs and is in the best interest of the district. As a result, we have resolved to create this *Energy Consumption Reduction Plan* which is to be implemented within each of our facilities and around all of our campuses. It is desired, through this policy, to produce a safe and productive environment for our students, while simultaneously providing prudent management of our financial and energy resources.

Energy Consumption Reduction Plan Resolution:
In response to requirements within Senate Bill 12 and House Bill 3693, signed by the Governor in June 2007 and effective as of September 1, 2007, our district now establishes a goal to reduce annual electric consumption by five percent (5%) each state fiscal year for the next six (6) years.

Commitment to Implementation of Plan:
Implementation of this plan shall be the joint responsibility of the trustees, administrators, staff and support personnel.

Specific efforts that shall be considered as potential action items are:
1. Efficient Lighting Systems
2. Solar Electric Generation Panels
3. Efficient Appliance Purchases
4. Vending Machine operating controls
5. General Maintenance and Operations revisions

Recording and Reporting of Utility Consumption:
In response to House Bill 3693, Section 8, the district shall record in an electronic repository the metered amount of electricity, water or natural gas consumed for which the district is responsible to pay and the aggregate costs of those utility services. The district shall then report the recorded information on a publicly accessible Internet website with an interface designed for ease of navigation if available, or at another publicly accessible location.

Having considered the responsibility of the district to conserve energy and to preserve our nations natural energy resources, improve the district's efficiency of operation, and eliminate unnecessary expenditures for energy, the _______________________ board of trustees does hereby adopt this *Energy Consumption Reduction Plan*.

Adopted this _____________ day of _______________, 200__.

Signature: _________________________________
President, Board of Trustees

Attest: _________________________________
Secretary, Board of Trustees

APPENDIX III

ELECTRIC UTILITY RATE SCHEDULE

AEP TEXAS NORTH COMPANY
TARIFF FOR ELECTRIC DELIVERY SERVICE
Applicable: **Entire System**
Chapter: **6** **Section: 6.1.1**
Section Title: Delivery System Charges
Revision: Fourth Effective Date: March 31, 2008

6.1.1.1.3 SECONDARY VOLTAGE SERVICE GREATER THAN 10 KW

AVAILABILITY

This schedule is applicable to Delivery Service for non-residential purposes at secondary voltage with demand greater than 10 kW when such Delivery Service is to one Point of Delivery and measured through one Meter.

TYPE OF SERVICE

Delivery Service will be single-phase 60 hertz, at a standard secondary voltage. Delivery Service will be metered using Company's standard meter provided for this type of Delivery Service. Any meter other than the standard meter will be provided at an additional charge. Where Delivery Service of the type desired is not available at the Point of Delivery, additional charges and special arrangements may be required prior to Delivery Service being furnished, pursuant to Section 5.7 and 6.1.2 of this Tariff.

MONTHLY RATE

I. Transmission and Distribution Charges:

Customer Charge			
	Non-IDR Metered	$4.25	per Retail Customer per Month
	IDR Metered	$26.00	per Retail Customer per Month
Metering Charge			
	Non-IDR Metered	$18.68	per Retail Customer per Month
	IDR Metered	$35.00	per Retail Customer per Month
Transmission System Charge			
	Non-IDR Metered	$1.245	per NCP kW Billing Demand
	IDR Metered	$1.953	per 4CP kW Billing Demand
Distribution System Charge		$3.21	per NCP kW Billing Demand

II. System Benefit Fund: $0.000657 per kWh See Charges for SBF

III. Transition Charge: See CTC

IV. Nuclear Decommissioning Charge: Not Applicable

PUBLIC UTILITY COMMISSION OF TEXAS
APPROVED
JAN - 2 '08 DOCKET 34561
CONTROL # ________

116

AEP TEXAS NORTH COMPANY
TARIFF FOR ELECTRIC DELIVERY SERVICE
Applicable: **Entire System**
Chapter: **6** **Section: 6.1.1**
Section Title: Delivery System Charges
Revision: Fourth Effective Date: March 31, 2008

V. Transmission Cost Recovery Factor:	See Rider TCRF
VI. Excess Mitigation Credit:	Not Applicable
VII. State Colleges and Universities Discount:	See Rider SCUD
VIII. Competitive Metering Credit	See Rider CMC
IX. Other Charges or Credits	
A. Rate Case Surcharge Rider	See Rider RCS

COMPANY-SPECIFIC APPLICATIONS
Refer to Section 6.2.2 of the Tariff for additional voltage information.

Three-phase service may be provided if Retail Customer has permanently installed, and in regular use, motor(s) which qualify according to Section 6.2.3.4, or, at the Company's sole discretion, the load is sufficient to warrant three-phase service.

Service will normally be metered at the service voltage. For more information, refer to the Meter Installation and Meter Testing Policy, Section 6.2.3.3 of the Tariff.

Refer to Section 5.5.2 of the Tariff for additional information regarding highly fluctuating loads.

Refer to Section 5.5.4 of the Tariff for additional information regarding operational changes significantly affecting Demand.

Refer to Section 5.5.5 of the Tariff for additional information regarding Power Factor.

Transmission service will be furnished by the Transmission Service Providers (TSPs), and not the Company. The Company performs only the billing function for TSPs.

Determination of Billing Demand for Transmission System Charges
Determination of NCP kW
The NCP kW applicable under the Monthly Rate section for transmission system charges for non-IDR metered customers and IDR metered customers without sufficient 4CP kW demand data shall be the kW supplied during the 15-minute period of maximum use during the billing month.

PUBLIC UTILITY COMMISSION OF TEXAS
APPROVED
JAN - 2 '08 DOCKET 34561
CONTROL # ____________

117

APPENDIX IV

GAS RATE SCHEDULE

Unavailable – Unit Cost established via Utility Analysis

APPENDIX V

UTILITIES CONSUMPTION HISTORY

OWNER: Anson General Hospital **BUILDING:** Main / Conference

MONTH / YEAR		ELECTRIC					NAT'L GAS / FUEL	
			DEMAND					
		CONSUMPTION	METERED	CHARGED	COST OF DEMAND	TOTAL ALL ELECTRICAL	CONSUMPTION	$
MONTH	YEAR	KWH	KW/KVA	KW/KVA	$	COSTS $	MCF	COSTS
JANUARY	2009	48821	165			$ 5,020	142	$1,213
FEBRUARY	2009	48749	169			$ 5,087	124	$848
MARCH	2009	43669	165			$ 4,665	97	$560
APRIL	2009	37329	161			$ 4,540	70	$343
MAY	2009	48241	152			$ 4,352	55	$287
JULY	2008	59011	169			$ 5,881	58	$765
AUGUST	2008	55771	173			$ 5,635	59	$927
SEPTEMBER	2008	59243	176			$ 5,933	42	$664
OCTOBER	2008	58601	195			$ 5,988	50	$641
NOVEMBER	2008	43071	161			$ 4,540	46	$536
DECEMBER	2008	37557	161			$ 4,069	58	$667
JUNE	2008	45263	164			$ 4,733	144	$1,605
TOTAL		**585,326**	**2,011**	**0**	**0**	**$60,443**	**945**	**9,056**

Annual Total Energy Cost = $69,499 Per Year

Total KWH x 0.003413 = 1,997.72 x 106
Total MCF x 1.03 = 973.35 x 106
Total Other x ____ x 106
Total Site BTU's/yr 2,971.07 x 106

Floor area: 35,000 s.f.

Energy Use Index:
Total Site BTU's/yr / Total Area (sq.ft.) = 84,888 BTU/s.f.yr

Energy Cost Index:
Total Energy Cost/yr / Total Area (sq.ft.) = $1.99 $/s.f. yr

Electric Utilities	Account #	Meter#
WTU/Direct Energy	Multiple	Multiple
AEP North		

Gas Utility	Account #
Atmos	0674230-3

APPENDIX VI

[Sample]

ENERGY POLICY

ENERGY POLICY

[Name of Institution]

Recognizing our responsibility as Trustees of ______________________________, we believe that every effort should be made to conserve energy and natural resources. As a result, we are establishing this Energy Management Policy which shall be implemented within each of our facilities. We believe that this policy will be beneficial for taxpayers and community residents in the prudent management of our financial and energy resources.

The fulfillment of this policy shall be the joint responsibility of the trustees, administrators, staff and support personnel. The success of the policy is dependent upon total cooperation from all levels within the system.

The board will designate an Energy Manager to coordinate and implement the overall Energy Policy. The Energy Manager will also maintain accurate records of energy consumption and cost on a monthly and annual basis. Energy audits will be conducted annually at each facility and recommendations will be made for updating and improving the energy program. Energy efficiency guidelines and procedures will be reviewed and accepted or rejected by the board. In addition, the procedures required for implementation of the program, and the results achieved from its administration, will be published for administrative and staff information.

Adopted this_________day of _________________________, 200 .

____
President, Board of Trustees

Attest: _______________________________
Secretary, Board of Trustees

APPENDIX VII

Preliminary Energy Assessment Service Agreement

From:ANSON GENERAL HOSPITAL 325+823+3098 07/07/2009 22:32 #933 P.003/003

OFFICE OF THE COMPTROLLER TEXAS

Preliminary Energy Assessment Service Agreement

SECO State Energy Conservation Office

Investing in our communities through improved energy efficiency in public buildings is a win-win opportunity for our communities and the State. Energy-efficient buildings reduce energy costs, increase available capital, spur economic growth, and improve working and living environments. The Preliminary Energy Assessment Service provides a viable strategy to achieve these goals.

Description of the Service

The State Energy Conservation Office (SECO) will analyze electric, gas and other utility data and work with ANSON GENERAL HOSPITAL , hereinafter referred to as Partner, to identify energy cost-savings potential. To achieve this potential, SECO and Partner have agreed to work together to complete an energy assessment of mutually selected facilities.

SECO agrees to provide this service at no cost to the Partner with the understanding that the Partner is ready and willing to consider implementing the energy savings recommendations.

Principles of the Agreement

Specific responsibilities of the Partner and SECO in this agreement are listed below.

- Partner will select a contact person to work with SECO and its contractor to establish an Energy Policy and set realistic energy efficiency goals.
- SECO's contractor will go on site to provide walk through assessments of selected facilities. SECO will provide a report which identifies no cost/low cost recommendations, Capital Retrofit Projects, and potential sources of funding. Portions of this report may be posted on the SECO Website.
- Partner will schedule a time for SECO's contractor to make a presentation of the assessment findings and recommendations to key decision makers.

Acceptance of Agreement

This agreement should be signed by your organization's chief executive officer or other upper management staff.

Signature: Ted D. Matthews Date: 7/08/09

Name (Mr./Ms./Dr.) Ted D. Matthews Title: Administrator

Organization: Anson General Hospital Phone: (325) 823-3231

Street Address: 101 Avenue J Fax: (325) 823-3098

Mailing Address: Same Anson, TX 79501 EMail: SALVE1301@SBCGLOBAL.NET

County Jones

CONTACT INFORMATION:

Name (Mr./Ms./Dr.): Ted D. Matthews Title: Same

Phone: Same Fax: Same

E-Mail: Same County Same

Please sign & **FAX** or mail to Glenda Baldwin at State Energy Conservation Office. **FAX: 512-475-2569**
Address: LBJ State Office Building, 111 E. 17th Street, Austin, Texas 78774. Phone: 512-463-1731
AND also, please fax a copy to your SECO Contractor: ESA Energy Systems Associates, Inc.; Attn: Yvonne Huneycutt **FAX: 512-388-3312** Phone: 512-258-0547 x124

APPENDIX VIII

Texas Energy Managers Association (TEMA)

ANNOUNCING!

TEMA

TEXAS ENERGY MANAGERS ASSOCIATION

A PROFESSIONAL ASSOCIATION FOR THOSE RESPONSIBLE FOR ENERGY MANAGEMENT IN TEXAS PUBLIC FACILITIES

- Networking
- Sharing Knowledge and Resources
- Training Workshops
- Regional Meetings
- Annual Conference
- Certification
- Legislative Updates
- Money-Saving Opportunities

WWW.TEXASEMA.ORG

Check the website for Membership and Association information.

Texas Energy Managers Association

SECO State Energy Conservation Office

APPENDIX IX

UTILITY CHARTS ON DISKETTE