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Texas Comptroller of Public Accounts

Facility Preliminary Energy Assessments and Recommendations

Prepared by:

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Calallen Independent School District

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SECO
State Energy Conservation Office

Table of Contents

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**.

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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.

In February 2011, **SECO** received a request for technical assistance from Edith George, Director of Finance and for **Calallen I.S.D.** **SECO** responded by sending ESA **Energy Systems Associates, Inc.**, a registered professional engineering firm, to prepare this preliminary report for the school district. This report is intended to provide support for the district as it determines the most appropriate path for facility renovation, especially as it pertains to the energy consuming systems around the facility. 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 analysis of the utility usage and costs for **Calallen ISD,** (hereafter known as CISD) 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 or facility. A complete listing of the Base Year Utility Costs and Consumption is provided in Section 3.0 of this report.

Following the utility analysis and a preliminary consultation with *Mr. Harley Schmidt*, a walk-through energy analysis was conducted throughout the campus. Specific findings of this survey and the resulting recommendations for both operation and maintenance procedures and cost-effective energy retrofit installations are identified in Section 7.0 of this report.

We estimate that as much as $4,900 may be saved annually if all recommended projects are implemented. The estimated installed cost of these projects should total approximately $30,000, yielding an average simple payback of 6-1/4 years.

Table 1: Summary of Recommended Energy Cost Reduction Measures (ECRMs)

SUMMARY:	IMPLEMENTATION COST	ESTIMATED SAVINGS	SIMPLE PAYBACK	PRIORITY
HVAC ECRM 1 RENOVATION OF AGED HVAC EQUIPMENT	$2,050/ton*	n/a	n/a	ONGOING PROJECT
HVAC ECRM 2 REPLACE REFRIGERANT PIPING INSULATION	$75/100 feet	$175	6 Months	1
LIGHTING ECRM 1 RETROFIT T12 TO T8	$20,000	$3,400	6 Years	3
LIGHTING ECRM 2 REPLACE METAL HALIDE WITH T5	$9,800/typical gym	$1,300/typical gym	7-1/2 Years	4
LIGHTING ECRM 3 REPLACE INCANDESCENT EXIT FIXTURES WITH LED	$125/each	$26.50/each	4-3/4 Years	2
TOTAL PROJECTS	**$30,000**	**$4,900**	**6-1/4 Years**	**n/a**

* The replacement of aged HVAC equipment is an ongoing project that the district has plans to continue until all of the older and most maintenance intensive equipment has been replaced. The scope of the project has been determined by the district and is therefore not included in the summary of recommended projects in this report.

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 Internal Rate of Return (IRR), for this retrofit program has been calculated and shown in Section 8.0 of this report.

Our final "summary" comment is that **SECO** views the completion and presentation of this report as a beginning, rather than an end, of our relationship with CISD. 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 your Energy Management Issues.

*ESA Energy Systems Associates, Inc. James W. Brown (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 initial visit was conducted by the professional engineering firm contracted by SECO to provide service within that area of the state to review the program elements that SECO provides to school districts and determine which elements could best benefit the district. A summary of the *Partner's* most recent twelve months of utility bills was provided to the engineer for the preliminary assessment of the Energy Performance Indicators. After reviewing the utility bill data analysis and consultation with SECO to determine the program elements to be provided to CISD, ESA returned to the facilities to perform the following tasks:

1. Designing and monitoring customized procedures to control the run times of energy consuming systems.
2. Analyze systems for code and standard compliance in areas such as cooling system refrigerants used, outside air quantity, and lighting illumination levels.
3. Develop an accurate definition of system and equipment replacement projects along with installation cost estimates, estimated energy and cost savings and analyses for each recommended project.
4. Develop a prioritized schedule for replacement projects.
5. Developing and drafting an overall Energy Management Policy.
6. Assist in the development of guidelines for efficiency levels of future equipment purchases.

3.0 ENERGY PERFORMANCE INDICATORS:

In order to easily assess the *Partner's* energy utilization and current level 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" (BTUs).

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 BTUs are then divided

by the building area.

EUI = [Electricity BTUs + Gas BTUs] 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 CISD ENERGY PERFORMANCE INDICATORS:

Calallen ISD				
CAMPUS	ENERGY COST INDEX (ECI) $/sf-year	COMPARISON TO DISTRICT AVERAGE	April 2010 SCORE Report ECI	COMPARISON TO SECO 2011 REPORT ECI
Administration	$1.14	28%	n/a	n/a
Calallen HS	$0.71	-20%	$1.17	65%
Calallen MS	$0.79	-11%	$1.18	49%
Calallen East Primary	$0.79	-11%	$1.33	68%

Calallen ISD				
CAMPUS	ENERGY UTILIZATION INDEX (EUI) BTUs/sf-year	COMPARISON TO DISTRICT AVERAGE	April 2010 SCORE Report EUI	COMPARISON TO SECO 2011 REPORT ECI
Administration	37,704	18%	n/a	n/a
Calallen HS	32,054	1%	30,100	-6%
Calallen MS	31,765	0%	30,100	-5%
Calallen East Primary	27,804	-13%	31,400	13%

For four of their five campuses, Calallen ISD purchases electricity from Suez Energy and the transmission and distribution utility is AEP – Texas Central Energy. The Wood River Elementary School is served by Nueces Electric Co-op. The energy analysis spreadsheets are shown on the next few pages.

The rate schedule analysis for the district is shown in Section 4.0.

A copy of the rate schedule is included in Appendix I

The district had received a SCORE Program benchmarking report in April of 2010, sponsored by their T&D provider AEP – Texas Central Energy. The energy indices calculated in this report are considerably better than those delineated in the SCORE report. These improvements were the result of several factors, including but not necessarily limited to:

1. HVAC renovations within the district, but predominantly at the High School campus.
2. More accurate assignment of square footage associated with the electrical consumption of each school's respective electric meter. The assigned area for each meter used in this report's analysis is defined on page 8.
3. One of the older facilities included in the SCORE report was replaced with a new building.

Below is a list of the utility bill meters that were included in the analysis and the square footage associated with each area. We did not include meters designated for play pavilions, concession stands or any other unconditioned, typically student-unoccupied space in the analysis.

Administration Building		
Area Served by ESI ID#	ESI ID#	Square Footage
Central Office	10032789447904300	8,320
Storage Portable	10032789447904300	1,536
	Total =	9,856

Calallen High School		
Area Served by ESI ID#	ESI ID#	Square Footage
MAIN BUILDING	10032789459302660	106,664
A GYM	10032789459302660	27,315
2-STORY ADDITION	10032789459302660	107,093
ENGLISH 400	10032789459302660	12,880
CAFETERIA EXPN.	10032789459302660	4,235
AG. BUILDING	10032789459302660	9,000
IND. ARTS BLDG	10032789459302660	11,883
FIELD HOUSE	10032789459302660	14,140
	Total =	293,210

Calallen Middle School		
Area Served by ESI ID#	ESI ID#	Square Footage
MAIN BUILDING	10032789467211290	121,931
6th GRADE&RR	10032789496353631	1,500
6th OFFICES	10032789496353631	1,792
SCIENCE/6TH ADDITION	10032789439185507	34,880
	Total =	160,103

Calallen East Primary		
Area Served by ESI ID#	ESI ID#	Square Footage
MAIN BUILDING	10032789443203581	43,896
CLASSROOM ADDITION	10032789494898718	10,000
	Total =	53,896

OWNER: Calallen ISD **BUILDING:** Administration

MONTH / YEAR		ELECTRIC					NAT'L GAS / FUEL	
			DEMAND					
MONTH	YEAR	CONSUMPTION KWH	METERED KW/KVA	CHARGED KW/KVA	COST OF DEMAND	TOTAL ALL ELECTRICAL COSTS $	CONSUMPTION MCF	COSTS $
JANUARY	2010	9,120	59	59	288	942	All Electric Facility	
FEBRUARY	2010	7,360	52	52	304	766		
MARCH	2010	5,360	54	54	234	563		
APRIL	2010	8,320	54	54	244	861		
MAY	2010	9,200	54	54	246	949		
JUNE	2010	11,680	54	54	248	1,196		
JULY	2010	10,640	54	54	251	1,092		
AUGUST	2010	12,640	54	54	256	1,297		
SEPTEMBER	2010	7,440	54	54	238	774		
OCTOBER	2010	7,120	54	54	243	742		
NOVEMBER	2010	9,280	52	52	257	974		
DECEMBER	2010	10,720	68	68	335	1,123		
TOTAL		108,880	663	663	3,144	$11,279		

Annual Total Energy Cost = $11,279 Per Year

Total KWH x 0.003413 = 371.61 x 106
Total MCF x 1.03 = 0.00 x 106
Total Other x ____ x 106
Total Site BTU's/yr 371.61 x 106

Floor area: 9,856 s.f.

Electric Utility GDF SUEZ
ESI ID # 4230

Energy Use Index:
Total Site BTU's/yr / Total Area (sq.ft.) = 37,704 BTU/s.f.yr

Energy Cost Index:
Total Energy Cost/yr / Total Area (sq.ft.) = $1.14 $/s.f. yr

OWNER: Calallen ISD **BUILDING:** Calallen HS

MONTH / YEAR		ELECTRIC					NAT'L GAS / FUEL	
			DEMAND					
MONTH	YEAR	CONSUMPTION KWH	METERED KW/KVA	CHARGED KW/KVA	COST OF DEMAND	TOTAL ALL ELECTRICAL COSTS $	CONSUMPTION MCF	COSTS $
JANUARY	2010	194,400	1078	1,078	8,746	14,844	311	2,684
FEBRUARY	2010	150,000	1078	1,078	8,765	13,093	262	2,740
MARCH	2010	163,200	1078	1,078	8,765	13,742	120	1,308
APRIL	2010	241,200	1185	1,185	9,463	20,075	46	475
MAY	2010	198,000	1201	1,201	9,572	16,771	40	393
JUNE	2010	151,200	1078	1,078	8,721	12,817	59	559
JULY	2010	196,800	1261	1,261	9,916	16,682	15	173
AUGUST	2010	319,200	1355	1,355	10,326	26,060	19	210
SEPTEMBER	2010	217,200	1168	1,168	9,142	18,246	40	412
OCTOBER	2010	217,200	1084	1,084	8,613	17,835	97	824
NOVEMBER	2010	182,400	1078	1,078	8,555	15,586	79	657
DECEMBER	2010	159,600	1147	1,147	9,368	11,055	116	914
TOTAL		2,390,400	13,791	13,791	109,952	$196,806	1,204	$11,349

Annual Total Energy Cost = $208,155 Per Year

Total KWH x 0.003413 = 8,158.44 x 106
Total MCF x 1.03 = 1,240.12 x 106
Total Other x ____ x 106
Total Site BTU's/yr 9,398.56 x 106

Floor area: 293,210 s.f.

Electric Utility GDF SUEZ
ESI ID# 2660

Energy Use Index:
Total Site BTU's/yr / Total Area (sq.ft.) = 32,054 BTU/s.f.yr

Energy Cost Index:
Total Energy Cost/yr / Total Area (sq.ft.) = $0.71 $/s.f. yr

OWNER: Calallen ISD **BUILDING:** Calallen MS

MONTH / YEAR		ELECTRIC					NAT'L GAS / FUEL	
			DEMAND					
MONTH	YEAR	CONSUMPTION KWH	METERED KW/KVA	CHARGED KW/KVA	COST OF DEMAND	TOTAL ALL ELECTRICAL COSTS $	CONSUMPTION MCF	COSTS $
JANUARY	2010	143,008	691	691	3,770	12,918	257	2,258
FEBRUARY	2010	122,936	704	704	3,906	11,299	169	1,843
MARCH	2010	106,864	740	740	4,022	10,218	111	1,190
APRIL	2010	149,144	714	714	3,901	14,277	53	537
MAY	2010	119,440	716	716	4,135	11,318	34	334
JUNE	2010	102,232	729	729	3,965	9,855	14	143
JULY	2010	27,456	293	293	1,961	2,354	3	49
AUGUST	2010	54,216	286	286	1,910	4,473	1	78
SEPTEMBER	2010	126,560	714	714	3,968	12,061	9	107
OCTOBER	2010	125,064	713	713	3,912	11,997	11	125
NOVEMBER	2010	86,880	579	579	2,720	8,855	57	517
DECEMBER	2010	98,720	654	654	3,400	9,457	36	315
TOTAL		**1,262,520**	**7,533**	**7,533**	**41,570**	**$119,082**	**754**	**$7,496**

Annual Total Energy Cost = $126,578 Per Year

Total KWH x 0.003413 = 4,308.98 x 106
Total MCF x 1.03 = 776.64 x 106
Total Other x ____ x 106
Total Site BTU's/yr 5,085.62 x 106

Floor area: 160,103 s.f.

Energy Use Index:
Total Site BTU's/yr / Total Area (sq.ft.) = 31,765 BTU/s.f.yr

Energy Cost Index:
Total Energy Cost/yr / Total Area (sq.ft.) = $0.79 $/s.f. yr

Electric Utility **ESI ID#**
GDF SUEZ 1290, 3631, 5507

OWNER: Calallen ISD **BUILDING:** Calallen East

MONTH / YEAR		ELECTRIC					NAT'L GAS / FUEL	
			DEMAND					
MONTH	YEAR	CONSUMPTION KWH	METERED KW/KVA	CHARGED KW/KVA	COST OF DEMAND	TOTAL ALL ELECTRICAL COSTS $	CONSUMPTION MCF	COSTS $
JANUARY	2010	43,008	286	286	1,516	4,396	All Electric Facility	
FEBRUARY	2010	36,096	259	259	1,626	3,498		
MARCH	2010	38,016	263	263	1,501	3,671		
APRIL	2010	50,112	274	274	1,595	4,827		
MAY	2010	48,576	263	263	1,522	4,708		
JUNE	2010	48,576	263	263	1,500	4,700		
JULY	2010	3,072	79	79	627	264		
AUGUST	2010	13,632	79	79	623	1,073		
SEPTEMBER	2010	40,128	276	276	1,590	3,918		
OCTOBER	2010	43,968	264	264	1,527	4,262		
NOVEMBER	2010	41,240	267	267	1,569	4,037		
DECEMBER	2010	32,640	326	326	1,962	3,228		
TOTAL		**439,064**	**2,899**	**2,899**	**17,158**	**$42,582**		

Annual Total Energy Cost = $42,582 Per Year

Total KWH x 0.003413 = 1,498.53 x 106
Total MCF x 1.03 = 0.00 x 106
Total Other x ____ x 106
Total Site BTU's/yr 1,498.53 x 106

Floor area: 53,896 s.f.

Energy Use Index:
Total Site BTU's/yr / Total Area (sq.ft.) = 27,804 BTU/s.f.yr

Energy Cost Index:
Total Energy Cost/yr / Total Area (sq.ft.) = $0.79 $/s.f. yr

Electric Utility **ESI ID#**
GDF SUEZ 3581, 8718

4.0 RATE SCHEDULE ANALYSIS:

ELECTRICITY PROVIDER:

RETAIL ELECTRIC PROVIDER: GDF SUEZ Contract price: $0.0739 per kWh

TRANSMISSION AND DISTRIBUTION UTILITY: AEP

Electric Rate: Secondary Service > 10 kVA

I.	TRANSMISSION AND DISTRIBUTION CHARGES:		
	Customer Charge	=	$26.52 per IDR meter
	Metering Charge	=	$15.81 per retail customer
	Transmission System Charge IDR	=	$1.793 per .4CP kW
	Distribution System Charge	=	$3.314 per NCP kW
II.	SYSTEM BENEFIT FUND	=	$0.000662 per kWh
III.	TRANSITION CHARGES		
	Transition Charge 1	=	$0.007991/kWh
	Transition Charge 2	=	$0.015553/kWh
IV.	NUCLEAR DECOMMISSIONING CHARGE	=	$0.0372 per Billing kW
V.	TRANSMISSION COST RECOVERY FACTOR	=	$0.4356 per Avg .4CP kW
	Reimbursement of Misc. Gross Receipts Tax/Fee	=	.3%

Average Savings for consumption = $0.07398/kWh + $0.000662/kWh + $0.007991/kWh + $0.015553/kWh = $0.098106/kWh
Average Savings for demand = $1.793 + $3.314 + $0.0372 + $0.4563 = $ 5.6005/kW

NATURAL GAS PROVIDER:

Total cost for natural gas at the five facilities in the analyzed billing cycle: $19,750

Total quantity purchased during the analyzed billing cycle: 2,024 MCF

Average cost per MCF = Cost of natural gas / quantity purchased = $19,750 / 2,024 MCF

Average cost per MCF = $9.75

5.0 CAMPUS DESCRIPTIONS:

Calallen ISD consists of 5 educational campuses, 1 High School, 1 Middle School, 1 Intermediate School, 1 Primary School, and 1 Elementary School which are located in the northwestern city limits of Corpus Christi, Texas.

School Facilities Analyzed For This Report

Facility	Year originally Constructed	Approximate Square Footage	Basic HVAC Cool/Heat	Basic Lighting System Description	Basic Control System Description
CISD Middle School	1981	160,103	Combination rooftop units and split system heat pumps with gas and electric heat	Combination T8 and Metal Halide	Automated Logic
CISD High School	1973	259,787	Packaged rooftop units and split system units	Combination T12, T8, Metal Halide	Automated Logic

The selection of campuses allows for comparison of energy strategies between different campuses as well as the ability to extrapolate recommendations for these facilities to other facilities in the district.

6.0 ENERGY RECOMMENDATIONS:

HVAC ECRM 1: RENOVATION OF AGED HVAC EQUIPMENT

The district has recognized the benefits of planned obsolescence (the practice of replacing a few units each year to avoid emergency replacement costs as units fail) and has replaced many of the HVAC units at the High School and Middle School. Due to the significant difference in cost between planned HVAC equipment replacement and emergency replacement, we encourage the district to continue their pro-active approach by retrofitting a small number of units each year rather than waiting for units to fail on their own requiring costly emergency unit replacement.

Estimated Cost: $2,050/ton Estimated Savings: n/a Estimated Payback: n/a

Note: The above estimate is an installed cost per nominal ton of cooling for rooftop or split system units. Since a specific project is not delineated and savings estimates will vary for the age, condition and type of equipment replaced, no estimate for savings or payback has been given.

HVAC ECRM 2: REPLACE AGING REFRIGERANT PIPING INSULATION

Upon inspection of the Middle School rooftop HVAC equipment, it was discovered that many of the units refrigerant piping insulation is showing signs of aging and could soon deteriorate leaving portions of the pipe uninsulated. This condition minimizes the ability of the refrigerant to absorb heat from the conditioned space as it absorbs heat from the roof. *We recommend the district replace the refrigerant piping insulation on all rooftop units that are not currently scheduled for replacement.*

Estimated Cost: $75/100 ft Estimated Savings: $175 Estimated Payback: 6 Months

Note: The above estimate is an installed cost per 100 feet of ¾" copper pipe refrigerant insulation. Since the exact length of damaged or missing refrigerant line insulation is unknown, an example for 100 feet of piping insulation has been supplied.

LIGHTING ECRM 1: RETROFIT T12 LIGHTING TO T8

At the Middle School, we discovered approximately 20% of the building still utilizes T12 lighting with magnetic ballasts. T12 components produce approximately 18% less light and consume about 20% more energy than the T8 lamps and electronic ballasts that may be retrofit into the existing linear fluorescent fixtures. Senate Bill 300 requires Texas school districts to install the most efficient lamps and ballasts possible in their existing fixtures. *Therefore we recommend the district retrofit all remaining T12 fixtures with T8 lamps and electronic ballasts.*

Estimated Cost: $20,000 Estimated Savings: $3,400 Estimated Payback: 6 years
Note: The above estimate is for the Middle School T12 lighting only.

LIGHTING ECRM 2: RETROFIT GYMNASIUM METAL HALIDE LIGHTING TO T5

During our preliminary discussions with building personnel, it was stated that the CISD gymnasiums at all campuses still utilize metal halide lighting except one gym that utilizes high output T12 fixtures. One characteristic of metal halide fixtures is they exhibit an inherently long re-strike if the fixtures are turned off. This 5-10 minute requirement for the lights to return to full light output encourages staff to leave the lights on throughout the day, even if the space is not occupied. *We recommend replacing the metal halides with T5 linear fluorescent fixtures to improve overall light levels in the space and to allow the fixtures to be turned off during unoccupied periods of the day.*

Given a typical gymnasium that utilizes 28 each 400-watt metal halide fixtures:

Estimated Cost: $9,800 Estimated Savings: $1,300 Estimated Payback: 7-1/2 Years

LIGHTING ECRM 3: REPLACE INCANDESCENT EXIT FIXTURES WITH LED FIXTURES

At the Middle School we noted numerous incandescent exit fixtures in the building. Most incandescent exit fixtures typically have two each 15-watt lamps and consume 30 watts per fixture, 8,760 hours per year. Therefore, each fixture consumes 263 kWh per year. LED exit fixtures consume less than 1.5 watts per fixture and reduce electrical consumption to 13 kWh per year.

Estimated Cost: $125 Estimated Savings: $26.50 Estimated Payback: 4-3/4 Years
Note: This cost is shown as installed cost for one fixture.

7.0 MAINTENANCE AND OPERATION RECOMMENDATIONS

HVAC	•Comb fins on damaged condensing units
Lighting	•Turn off all light fixtures not required during daytime
Controls	•Adjust lighting timeclock to accuratly control lights •Adjust High School water heater temperature setpoint
Envelope	•Install new weatherstripping at all doors where it is damaged or missing

Maintenance and Operation procedures are strategies that can offer significant energy savings potential, yet require little or no capital investment by the district to implement. Exact paybacks are at times difficult to calculate, but are typically always less than one year. The difficulties with payback calculation are often related to the fact that the investigation required to make the payback calculation, for example measuring the air gap between exterior doors and missing or damaged weatherstripping so that exact air losses may be determined, is time and cost prohibitive when the benefits of renovating door and weather weatherstripping are well documented and universally accepted.

It was noted that some of the exterior doors had missing or damaged weatherstripping (see picture to the right). We recommend the district replace the weatherstripping to minimize the low of conditioned air and the entrance of dust and contaminants.

HVAC M&O

Our main HVAC M&O recommendation for CISD is to comb any damaged condenser fins [combs available for less than $10] to facilitate the unit's ability to reject heat to the surrounding atmosphere. Although many of the units are scheduled to be replaced as part of the district's planned obsolescence approach to HVAC replacement, we recommend combing the units that are not scheduled for immediate replacement in order to optimize the efficiency of the units in operation. Damage to just 10% of the coil fins on an HVAC unit can result in up to a 30% loss of efficiency for the unit.

Lighting M&O

It was noted that some areas of the Middle School had light fixtures that were operating during daytime hours that were not required due to natural sunlight entering the building (see picture to the right). We recommend a district wide inspection of over-lit areas and a determination of which lights can be turned off during the day. *Due to their high energy consumption, we recommend any metal halides (like the one seen in the picture to the right) be the first to get shut off when the light is not nessesary in a given space.*

Controls M&O

A Middle School staff member stated that the exterior lighting was not always on during some dark hours of the evening or early morning. Upon examining the lighting timeclock controller, it was noted that this model is not designed to automatically adjust to daylight savings time changes. *We recommend the lighting timeclock be updated immediately for daylight savings time changes, or replaced with a unit that does automatically adjust to these changes, to provide adequate light to the exterior of the building at night and to eliminate any lights remaining on during daylight hours.*

We also recommend the HVAC timeclock be adjusted to turn on the needed equipment in the morning and shut it off when the building is no longer in use. A conservative energy management policy operates HVAC equipment to maintain occupant comfort during scheduled occupancy hours, but eliminates HVAC equipment operation at all other times.

Envelope M&O

It was noted during the survey that some exterior doors had missing or damaged weatherstripping. We recommend the district inspect and replace all damaged weatherstripping to minimize the loss of conditioned air and the entrance of dust and contaminants.

8.0 FINANCIAL EVALUATION

Financing of these projects may be provided using a variety of methods such as Bond Programs, municipal leases, or state financing programs like the SECO LoanSTAR Program.

If the project was financed with in-house funds, the internal rate of return for the investment would be as follows:

Proposal:	Perform recommended ECRMs			
Assumptions:				
1. Equipment will last at least 15 years prior to next renovation				
2. No maintenance expenses for first five years (warranty period)				
3. $500 maintenance expense next 5 years				
4. $1,000 maintenance expense next 5 years				
5. Savings decreases 2% per year after year 5				
Cash Flow	**Project Cost**	**Project Savings**	**Maintenance Expense**	**Net Cash Flow**
Time 0	($30,000)		0	($30,000)
Year 1		$ 4,900.00	0	$4,900
Year 2		$ 4,900.00	0	$4,900
Year 3		$ 4,900.00	0	$4,900
Year 4		$ 4,900.00	0	$4,900
Year 5		$ 4,900.00	0	$4,900
Year 6		$ 4,802.00	($500)	$4,302
Year 7		$ 4,704.00	($500)	$4,204
Year 8		$ 4,606.00	($500)	$4,106
Year 9		$ 4,508.00	($500)	$4,008
Year 10		$ 4,410.00	($500)	$3,910
Year 11		$ 4,312.00	($1,000)	$3,312
Year 12		$ 4,214.00	($1,000)	$3,214
Year 13		$ 4,116.00	($1,000)	$3,116
Year 14		$ 4,018.00	($1,000)	$3,018
Year 15		$ 3,920.00	($1,000)	$2,920
			Internal Rate of Return	**11.83%**

More information regarding financial programs available to CISD can be found in:

APPENDIX I: SUMMARY OF FUNDING AND PROCUREMENT OPTIONS

9.0 GENERAL COMMENTS

This report has been prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted engineering practices. All estimations provided in this report were based upon information provided to ESA by the District and their respective utility providers. While cost saving estimates have been provided, they are not intended to be considered a guarantee of cost savings. No guarantees or warranties, expressed or implied, are intended or made. Changes in energy usage or utility pricing from those provided will impact the overall calculations of estimated savings and could result in different or longer payback periods.

APPENDICES

APPENDIX I - SUMMARY OF FUNDING AND PROCUREMENT OPTIONS FOR CAPITAL EXPENDITURE PROJECTS

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 Eddy Trevino of SECO (512-463-1876) 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 Board 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 Eddy Trevino 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*

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*

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

APPENDIX II - ELECTRIC UTILITY RATE SCHEDULE

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	$3.26	per Retail Customer per Month
IDR Metered	$26.52	per Retail Customer per Month
Metering Charge	$15.81	per Retail Customer per Month
Transmission System Charge		
Non-IDR Metered	$1.286	per NCP kW Billing Demand
IDR Metered	$1.793	per 4CP kW Billing Demand
Distribution System Charge	$3.314	per NCP kW Billing Demand

II. System Benefit Fund: $0.000662 per kWh See SBF 6.1.1.4

III. Transition Charge: See Riders TC 6.1.1.2.1.1 and TC-2 6.1.1.2.2.1

IV. Nuclear Decommissioning Charge: See Rider NDC 6.1.1.5.1

V. Transmission Cost Recovery Factor: See Rider TCRF 6.1.1.6.2.1

VI. Excess Mitigation Credit: Not Applicable

VII. State Colleges and Universities Discount: See Rider SCUD 6.1.1.6.1

VIII. Competitive Metering Credit: See Rider CMC 6.1.1.6.6

IX. Other Charges or Credits:

A. Rate Case Surcharge Rider See Rider RCS-2 6.1.1.6.8

B. True-up Case Surcharge Rider See Rider TCE 6.1.1.6.7

C. Energy Efficiency Rider See Rider EECRF 6.1.1.6.4.1

D. Advanced Metering System Rider See Rider AMSCRF 6.1.1.6.9

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.

Determination of 4 CP kW For IDR Metered Customers

If the Billing Meter is an IDR Meter that was installed at the Retail Customer's request, or by Commission rule, the transmission system charges will be calculated using the 4CP billing kW demand as determined in this section. The 4 CP kW demand applicable under the Monthly Rate section shall be the average of the sum of the Retail Customer's integrated 15-minute demands at the time of the monthly ERCOT system 15-minute peak demand for the months of June, July, August and September of the previous calendar year. The Retail Customer's average 4 CP kW demand will be updated effective on January 1 of each calendar year and remain fixed throughout the calendar year. Retail Customers without previous history on which to determine their 4 CP kW demand will be billed at the applicable NCP kW demand rate under the "Transmission System Charge" using the Retail Customer's NCP kW demand.

All Retail Customers with IDR metering, except IDR meters installed by Company for load survey purposes, will be billed Transmission charges on their 4 CP kW demand pursuant to this schedule.

Determination of Billing Demand for Distribution System Charges

Determination of NCP kW Billing Demand

The NCP kW Billing Demand shall be the kW supplied during the 15-minute period of maximum use. The NCP kW Billing Demand applicable to the Distribution System Charge shall be the higher of the NCP kW demand for the current billing month or 80% of the highest monthly NCP kW demand established in the 11 months preceding the current billing month (80% ratchet). The 80% ratchet shall not apply to Retail Seasonal Agricultural Customers.

Determination Of Billing Demand When Meter Readings Cannot be Obtained

When meter readings cannot be obtained due to denial of access, weather, meter failure, tampering, or other event, the Retail Customer's demand will be estimated pursuant to Section 6.2.3.2.

NOTICE

This rate schedule is subject to the Company's Tariff and Applicable Legal Authorities.

APPENDIX IV - PRELIMINARY ENERGY ASSESSMENT SERVICE AGREEMENT

OFFICE OF THE COMPTROLLER TEXAS

SECO
State Energy Conservation Office

Public Schools, Colleges and Non-Profit Hospitals

Preliminary Energy Assessment
Service Agreement

Investing in our public schools, colleges and non-profit hospitals 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 CALALLEN ISD, 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 designated 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 key decision makers.

Acceptance of Agreement

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

Signature: Edith George — Date: 2/24/2011

Name (Mr./Ms./Dr.) EDITH GEORGE — Title: DIRECTOR OF FINANCE

Organization: Calallen ISD — Phone: 361-242-5600

Street Address: 4205 WILDCAT DR. — Fax: 361-242-5619

Mailing Address: Corpus Christi, TX 78410 — E-Mail: egeorge@calallen.k12.tx.us

County: Nueces

Contact Information:

Name (Mr./Ms./Dr.): HARLEY SCHMIDT — Title: DIRECTOR M&O

Phone: 361-242-5975 CELL 361-439-3097 — Fax: 361-242-5977

E-Mail: hschmidt@calallen.k12.tx.us — County: NUECES

Please sign and mail or fax to: Stephen Ross, Schools and Education Program Administrator, State Energy Conservation Office, 111 E. 17th Street, Austin, Texas 78774. Phone: 512-463-1770. Fax 512-475-2569.

AND fax to the SECO Contractor for this service, Colby May, ESA Energy Systems Associates, Inc. Phone: 512-258-0547, x124. Fax: 512-388-3312.

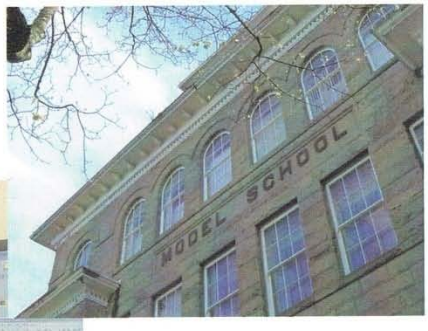
APPENDIX V - TEXAS ENERGY MANAGERS ASSOCIATION (TEMA)

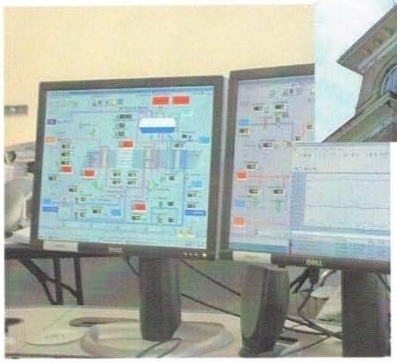
ANNOUNCING!

TEXAS ENERGY MANAGERS ASSOCIATION

TEMA

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.

SECO
State Energy Conservation Office

APPENDIX VI - UTILITY CHARTS ON CD