Susan Combs
Texas Comptroller of Public Accounts

Facility Preliminary Energy Assessments and Recommendations

Prepared by:

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Community Independent School District

April 5, 2011

ESA-Energy Systems Associates, Inc.
F-4882

SECO
State Energy Conservation Office

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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**.

SECO
State Energy Conservation Office

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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 2010, **SECO** received a request for technical assistance from Dr. Bud Nauyokas, Superintendent for **Community 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 **Community 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. Harold McNair and Ronny Roan*, 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 **$8,415** may be saved annually if all recommended projects are implemented. The estimated installed cost of these projects should total approximately **$63,000**, yielding an average simple payback of **7-1/2** years.

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

SUMMARY:	IMPLEMENTATION COST	ESTIMATED SAVINGS	SIMPLE PAYBACK
Lighting ECRM #1	$63,000	8,415	7-1/2 Years
TOTAL PROJECTS	**$ 63,000**	**$8,415**	**7-1/2 Years**

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. The purpose of this visit is 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 requested for the engineer's preliminary assessment of the Energy Performance Indicators. After 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:

CAMPUS	ENERGY UTILIZATION INDEX (EUI) BTUs/sf-year	COMPARISON TO DISTRICT AVERAGE	ENERGY COST INDEX (ECI) $/sf-year	COMPARISON TO DISTRICT AVERAGE
Community HS	34,316	-34%	$0.75	-38%
Community MS	35,111	-32%	$0.93	-23%
McClendon ES	55,630	8%	$1.31	8%
Nesmith ES	63,591	23%	$1.24	3%
Sports Complex	69,563	35%	$1.81	50%
Average Value:	51,642		$1.21	

Community ISD purchases electricity for all schools except NeSmith ES from Direct Energy. The transmission and distribution utility is Oncor. NeSmith ES is located 4-1/2 miles from Nevada in Lavon, Texas and is served by Farmer's Electric Cooperative. The energy history spreadsheets are shown on the next few pages.

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

Copies of the rate schedules are included in Appendix I.

OWNER: **Community ISD** **BUILDING:** **Community HS**

MONTH / YEAR		ELECTRIC					NAT'L GAS / FUEL	
			DEMAND					
		CONSUMPTION	METERED	CHARGED	COST OF	TOTAL ALL ELECTRICAL	CONSUMPTION	COSTS
MONTH	YEAR	KWH	KW/KVA	KW/KVA	DEMAND	COSTS $	MCF	$
JANUARY	2010	38,700		182	1,754	6,332	538	3,264
FEBRUARY	2010	56,400		198	1,743	6,806	516	3,349
MARCH	2010	56,700		225	1,794	6,884	325	2,009
APRIL	2010	65,400		246	1,834	7,704	170	1,075
MAY	2010	72,900		318	2,075	8,619	45	279
JUNE	2010	92,400		330	2,107	10,400	16	108
JULY	2010	72,000		210	1,712	8,174	16	132
AUGUST	2010	90,900		342	2,184	10,343	31	257
SEPTEMBER	2010	114,600		393	2,542	12,827	51	408
OCTOBER	2010	75,900		345	2,217	9,030	60	465
NOVEMBER	2010	62,100		285	1,966	7,540	152	1,146
DECEMBER	2010	58,200		216	1,848	7,071	511	3,689
TOTAL		856,200	3,290	3,290	23,776	$101,730	2,431	$16,181

Annual Total Energy Cost = $117,911 Per Year

Total KWH x 0.003413 = 2,922.21 x 106
Total MCF x 1.03 = 2,503.93 x 106
Total Other x ____ x 106
Total Site BTU's/yr 5,426.14 x 106

Floor area: 158,121 s.f.

Energy Use Index:
Total Site BTU's/yr / Total Area (sq.ft.) = 34,316 BTU/s.f.yr

Energy Cost Index:
Total Energy Cost/yr / Total Area (sq.ft.) = $0.75 $/s.f. yr

Electric Utility	**Account #**	**Meter#**	**Gas Utility**	**Meter #**
Direct Energy	1044372000542810	103212973	Atmos Energy	801000023

OWNER: **Community ISD** **BUILDING:** **Community MS**

MONTH / YEAR		ELECTRIC					NAT'L GAS / FUEL	
			DEMAND					
		CONSUMPTION	METERED	CHARGED	COST OF	TOTAL ALL ELECTRICAL	CONSUMPTION	COSTS
MONTH	YEAR	KWH	KW/KVA	KW/KVA	DEMAND	COSTS $	MCF	$
JANUARY	2010	14,265		176	1,469	6,304	266	1,624
FEBRUARY	2010	49,500		0	1,455	5,898	267	1,744
MARCH	2010	45,900		0	1,523	5,644	170	1,056
APRIL	2010	52,200		0	1,561	6,247	56	367
MAY	2010	67,800		282	1,892	7,977	22	144
JUNE	2010	54,600		210	1,501	6,402	14	93
JULY	2010	59,700		264	1,814	7,173	16	136
AUGUST	2010	85,200		354	2,376	10,024	11	103
SEPTEMBER	2010	74,700		318	2,143	8,848	18	157
OCTOBER	2010	57,000		240	1,817	6,934	23	185
NOVEMBER	2010	53,400		240	1,814	6,606	77	584
DECEMBER	2010	49,500		240	1,810	6,252	242	1,757
TOTAL		663,765	0	2,324	21,175	$84,309	1,182	$7,950

Annual Total Energy Cost = $92,259 Per Year

Total KWH x 0.003413 = 2,265.43 x 106
Total MCF x 1.03 = 1,217.46 x 106
Total Other x ____ x 106
Total Site BTU's/yr 3,482.89 x 106

Floor area: 99,196 s.f.

Energy Use Index:
Total Site BTU's/yr / Total Area (sq.ft.) = 35,111 BTU/s.f.yr

Energy Cost Index:
Total Energy Cost/yr / Total Area (sq.ft.) = $0.93 $/s.f. yr

Electric Utility	**Account #**	**Meter#**	**Gas Utility**	**Meter #**
Direct Energy	1044372000542922	104298105	Atmos Energy	26831

OWNER: **Community ISD** **BUILDING:** **McClendon ES**

MONTH / YEAR		ELECTRIC					NAT'L GAS / FUEL	
			DEMAND					
		CONSUMPTION	METERED	CHARGED	COST OF	TOTAL ALL ELECTRICAL	CONSUMPTION	COSTS
MONTH	YEAR	KWH	KW/KVA	KW/KVA	DEMAND	COSTS $	MCF	$
JANUARY	2010	39,555		169	1,697	6,083	385	2,340
FEBRUARY	2010	45,900		153	1,670	5,791	468	3,041
MARCH	2010	40,500		150	1,667	5,304	261	1,616
APRIL	2010	47,400		195	1,744	6,000	88	564
MAY	2010	54,000		258	1,858	6,706	30	188
JUNE	2010	69,300		318	2,044	8,264	11	78
JULY	2010	57,300		258	1,815	6,958	7	66
AUGUST	2010	72,300		315	2,052	8,541	8	74
SEPTEMBER	2010	87,900		390	2,537	10,427	22	186
OCTOBER	2010	54,900		285	2,006	6,935	28	224
NOVEMBER	2010	48,000		216	1,857	6,166	94	709
DECEMBER	2010	44,400		159	1,754	5,738	305	2,206
TOTAL		661,455	0	2,866	22,701	$82,913	1,707	$11,292

Annual Total Energy Cost =	$94,205	Per Year	**Energy Use Index:** Total Site BTU's/yr / Total Area (sq.ft.)	55,630 BTU/s.f.yr
Total KWH x 0.003413 =	2,257.55	x 106		
Total MCF x 1.03 =	1,758.21	x 106	**Energy Cost Index:** Total Energy Cost/yr / Total Area (sq.ft.)	$1.31 $/s.f. yr
Total Other x ____		x 106		
Total Site BTU's/yr	4,015.76	x 106		
Floor area:	72,187	s.f.		

Electric Utility	Account #	Meter#	Gas Utility	Meter #
Direct Energy	1044372000871447	104298104	Atmos Energy	6028666

OWNER: **Community ISD** **BUILDING:** **NeSmith ES**

MONTH / YEAR		ELECTRIC					NAT'L GAS / FUEL	
			DEMAND					
		CONSUMPTION	METERED	CHARGED	COST OF	TOTAL ALL ELECTRICAL	CONSUMPTION	COSTS
MONTH	YEAR	KWH	KW/KVA	KW/KVA	DEMAND	COSTS $	MCF	$
JANUARY	2010	44,928		150	839	4,359	453	2,994
FEBRUARY	2010	41,280		148	828	3,807	471	3,327
MARCH	2010	41,360		174	974	4,176	270	1,812
APRIL	2010	47,120		196	1,099	4,728	105	728
MAY	2010	73,840		249	1,392	7,948	34	234
JUNE	2010	64,400		267	1,497	7,239	13	96
JULY	2010	72,160		255	1,430	7,470	12	112
AUGUST	2010	81,680		299	1,677	8,499	6	68
SEPTEMBER	2010	65,760		249	1,396	6,915	14	131
OCTOBER	2010	48,560		214	1,197	5,311	46	393
NOVEMBER	2010	48,000		174	977	5,039	143	1,171
DECEMBER	2010	45,920		148	828	4,688	414	3,252
TOTAL		675,008	0	2,523	14,134	$70,179	1,981	$14,318

Annual Total Energy Cost =	$84,497	Per Year	**Energy Use Index:** Total Site BTU's/yr / Total Area (sq.ft.)	63,591 BTU/s.f.yr
Total KWH x 0.003413 =	2,303.80	x 106		
Total MCF x 1.03 =	2,040.43	x 106	**Energy Cost Index:** Total Energy Cost/yr / Total Area (sq.ft.)	$1.24 $/s.f. yr
Total Other x ____		x 106		
Total Site BTU's/yr	4,344.23	x 106		
Floor area:	68,315	s.f.		

Electric Utility	Account #	Meter#	Gas Utility	Meter #
Farmers Electric Cooperative	3354060600	46930	Atmos Energy	828941

OWNER: **Community ISD** **BUILDING:** **Sports Bldg**

MONTH / YEAR		ELECTRIC					NAT'L GAS / FUEL	
			DEMAND					
		CONSUMPTION	METERED	CHARGED	COST OF	TOTAL ALL ELECTRICAL	CONSUMPTION	COSTS
MONTH	**YEAR**	**KWH**	**KW/KVA**	**KW/KVA**	**DEMAND**	**COSTS $**	**MCF**	**$**
JANUARY	2010	44,130		160	1,218	6,076	167	1,025
FEBRUARY	2010	48,800		114	1,133	5,513	254	1,659
MARCH	2010	43,600		98	1,108	5,022	160	996
APRIL	2010	49,400		124	1,172	5,606	36	240
MAY	2010	51,600		146	1,218	5,850	15	100
JUNE	2010	81,000		184	1,240	8,509	11	79
JULY	2010	71,600		184	1,201	7,627	12	109
AUGUST	2010	73,800		184	1,235	7,858	12	106
SEPTEMBER	2010	71,400		184	1,246	7,654	17	150
OCTOBER	2010	77,000		270	1,735	8,646	19	159
NOVEMBER	2010	39,600		270	1,711	5,266	19	156
DECEMBER	2010	55,000		154	1,317	6,252	117	858
TOTAL		**706,930**	**0**	**2,072**	**15,534**	**$79,879**	**839**	**$5,637**

			Energy Use Index:		
Annual Total Energy Cost =	$85,516	Per Year	Total Site BTU's/yr	69,353	BTU/s.f.yr
			Total Area (sq.ft.)		
Total KWH x 0.003413 =	2,412.75	x 106			
Total MCF x 1.03 =	864.17	x 106	**Energy Cost Index:**		
Total Other x ____		x 106	Total Energy Cost/yr	$1.81	$/s.f. yr
Total Site BTU's/yr	3,276.92	x 106	Total Area (sq.ft.)		
Floor area:	47,250	s.f.			

Electric Utility	**Account #**	**Meter#**	**Gas Utility**	**Meter #**
Direct Energy	1044372000837565	104299803	Atmos Energy	44001588

4.0 RATE SCHEDULE ANALYSIS:

ELECTRICITY PROVIDER:

RETAIL ELECTRIC PROVIDER: Direct Energy Contract price: $0.0897 per kWh

TRANSMISSION AND DISTRIBUTION UTILITY: Oncor

Electric Rate: Secondary Service > 10 kVA

I.	TRANSMISSION AND DISTRIBUTION CHARGES:		
	Customer Charge	=	$3.50 per meter
	Metering Charge	=	$18.41 per IDR meter
	Transmission System Charge		
	IDR Metered	=	$1.99 per 4CP kW
	Distribution System Charge	=	$3.97 per Distribution System Billing kW
II.	SYSTEM BENEFIT FUND	=	$0.000655 per kWh see Rider SBF
III.	TRANSITION CHARGES		
	Transition Charge 1	=	$0.188/kW
	Transition Charge 2	=	$0.269/kW
IV.	NUCLEAR DECOMMISSIONING CHARGE	=	$0.044 per Distribution System Billing kW
V.	TRANSMISSION COST RECOVERY FACTOR	=	$0.175714/4CP Kw
VI.	ENERGY EFFICIENCY COST RECOVERY FACTOR	=	$9.66/Retail Customer
VII.	COMPETITIVE METER CREDIT	=	$5.47/Month
VIII.	ADVANCED METERING COST RECOVERY FACTOR	=	$3.98/Month
IX.	RATE CASE EXPENSE SURCHARGE	=	$0.007944/kW
X.	TAXES		
	General Local Taxes		

Average Savings for consumption = $0.0897/kWh + $0.000655/kWh = $0.090355/kWh
Average Savings for demand = $1.99 + $3.97 + $0.188 + $0.269 + $0.044 + $0.175714 + $0.007944 = $ 6.644658/kW**

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

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

ELECTRICITY PROVIDER:

RETAIL ELECTRIC PROVIDER: None Contract price: $0.0897 per kWh

TRANSMISSION AND DISTRIBUTION UTILITY: Farmers Electric Cooperative, Inc.

Electric Rate: Large Power >50 kW peak demand

I.	BASE CHARGE	=	$125.00/Meter
II.	DEMAND CHARGE	=	$5.60/Billing kW
	First 300 kWh	=	$0.083957/Billing kWh
	Over 300 kWh	=	$0.066295/Billing kWh

NATURAL GAS PROVIDER:

The rate schedule for Natural gas is unavailable, but we have calculated the average cost per MCF of purchased natural gas in the district by analyzing the utility histories for the schools surveyed in this report.

Total cost for natural gas at the five facilities in the analyzed billing cycle: $5,637

Total quantity purchased during the analyzed billing cycle: 839 MCF

Average cost per MCF = Cost of natural gas / quantity purchased = $5,637 / 839 MCF

Average cost per MCF = $6.72

5.0 CAMPUS DESCRIPTIONS:

Community ISD consists of 5 educational campuses which are all located in Community County; in and throughout the cities of Nevada and Lavon. The energy survey focused on four of the educational campuses:

Table 2: 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
Community HS	1987, Recent Addition at same time as Sports Complex	158,121	RTU-DX Cooled/ Natural Gas Heat	T8, ~25% with Occupancy Sensors	DDC Alerton
Community MS	1974	99,196	RTU-DX Cooled/ Natural Gas Heat	T8	DDC Alerton
McClendon ES	1998	72,187	RTU-DX Cooled/ Natural Gas Heat	T8	DDC Alerton
Sports Complex	N/A	47,250	RTU-DX Cooled/ Natural Gas Heat	Metal Halides	DDC Alerton

Note: The selection of campuses to be surveyed in the report represented a mix of older and newer campuses which allows for comparison of energy strategies between older and newer designs 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

It was noted during the survey that several pieces of equipment have reached the end of their useful life expectancy. *We recommend this equipment be included in subsequent maintenance budgets to be replaced as planned equipment upgrades in order to avoid the higher cost of emergency replacement when they inevitably fail.*

<u>Community Middle School</u>

This 1974-built, dual-purpose facility serves the middle school and the administration offices. The facility is conditioned with approximately thirty packaged DX rooftop units, with each unit on the campus serving three to four rooms depending on room sizes. The server room is conditioned with two residential split system units. Since its original construction, most of the original units have been replaced by the district through a system commonly referred to as "planned obsolescence." In this process, a few of the oldest or most maintenance intensive units are replaced each year so that the district can plan for the equipment replacement and not have to schedule a massive HVAC project that would occur when all of the units began to fail at the same time. The useful life expectancy of rooftop units and split systems is 15-20 years. Below is a schedule listing units that w*e recommend be budgeted for replacement within the next 5 years to avoid emergency replacement costs that would be incurred if the units are allowed to fail on their own.*

Replacement Recommendation Table:

Year of Manufacture	Quantity	Model	Electrical (compressor)	Heat (MBH Natural Gas unless otherwise noted)	Tonnage
1994	8	Trane YCD181B410DB	460/3/60	37A/250MBH	15
1994	2	Trane YCD091D4L0BC	460/3/60	22A/120MBH Input	7.5
1994	2	Trane YCD121B4L0DB	460/3/60	29A/150MBH Input	10
1998	1	RUUD UAKA-060JA7	208/1/60	31A	5
1998	1	Rheem RAJB-037JA7	208/1/60	18A	3
1994	1	Lennox HS23-463-5G	460/3/60	6A	3.5
No Nameplate (old)	1	Lennox	Unknown	Unknown	5
1999	1	Lennox 10ACB 42-11P	208/1/60	20A	3.5
1999	1	Rheem RAMB-048JB7	208/1/60	10A	4

If all of this equipment was going to be replaced in one project, the project budget would approximate:

Estimated Cost: $446,250   Estimated Savings: $37,200   Estimated Payback: 12 Years

<u>Note: As this is an ongoing project for the district and there is no plan to replace all of this equipment at one time, this project cost and savings estimates have been omitted from the overall project summary.</u>

Lighting ECRM 1: METAL HALIDE FIXTURE RETROFIT TO T5

It was noted during the survey that the gymnasiums at the school campuses and the sports complex utilize 400 watt metal halide fixtures. Metal halide fixtures have an inherently long re-strike time, which means there is a 5-10 minute delay after the lights are turned on for the lamps to warm up to their full operating light output level. This often promotes coaches and facility operators to leave gym lights energized throughout the day in order to avoid lengthy delays in getting the area illuminated for immediate use. *We recommend replacing each metal halide fixtures with new 54 watt six-lamp T5 high-output fluorescent fixtures.* The facilities at CISD utilize the following quantities of metal halide fixtures in each of their gymnasiums:

Facility	# Existing 400w Metal Halides	# of new T5 HO fixtures	Estimated Installed Cost	Estimated Annual Savings	Simple Payback (Years)
Auxilliary Gym	12	12	$ 4,200	$ 561	7-1/2
McClendon ES	12	12	$ 4,200	$ 561	7-1/2
NeSmith ES	20	20	$ 7,000	$ 935	7-1/2
Middle School	20	20	$ 7,000	$ 935	7-1/2
High School	36	36	$ 12,600	$ 1,683	7-1/2
Sports Complex	80	80	$ 28,000	$ 3,740	7-1/2
TOTAL			$ 63,000	$ 8,415	7-1/2

Estimated Cost: $63,000 *Estimated Savings: $8,415* *Estimated Payback: 7-1/2*

7.0 MAINTENANCE AND OPERATION RECOMMENDATIONS

HVAC

- Inspect and repair piping insulation at Community Middle School and all other Community ISD campuses
- Install hail guards to protect condensor coil fins in future
- Increase frequency of filter replacement

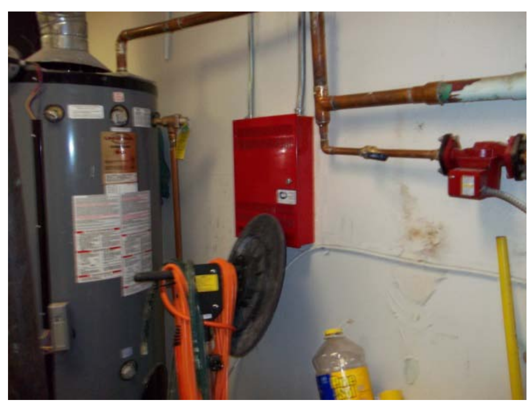
Lighting

- Turn off all light fixtures not required during daytime
- Turn off lights in unoccupied spaces
- Replace the current exterior light timers with photocell sensors

Controls

- Reprogram scheduled conditioning time
- Reduce domestic hot water supply temperature in Sports Complex

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.



<u>HVAC M&O</u>

It was noted during the survey that the hot water piping at the Middle School was not insulated. The majority of the energy losses in a hot water system occur in the hot water piping. *We recommend the district insulate the hot water piping to minimize energy losses in the hot water system.*

Additionally, domestic hot water supply temperature in the Sports Complex building was observed to be 154°F. This temperature could be reduced to 140°F to still prevent bacteria growth in the hot water storage tank while reducing energy consumption. *We recommend reducing the domestic hot water set point in the Sports Complex to 140°F.*

Lighting M&O

There were areas in Community High School where natural daylight was brought into the building with windows or light wells and the light fixtures were still operating during daytime hours. *We recommend turning off light fixtures close to the natural light source when sufficient natural light supplies the recommended light levels for the tasks expected in the space.* These levels are designated by the Illumination Engineering Society of North America (IESNA) for each type of space in a school facility. The least expensive means to turn these fixtures off is to train district staff to not turn them on during the daytime hours. If staff training is unsuccessful, then automatic means, for instance photocells and occupancy sensor controls, can be installed to control the light fixtures automatically.

During the survey, the light controller pictured below was observed in the cafeteria. The cafeteria has 2 window walls, also show below, which provide a day-lighting opportunity. This was mentioned to Mr. Harold McNair, and a lighting scheme was devised on-the-spot to reduce the number of lights being operated when the cafeteria was not in use.

It was also noted that the exterior lighting is controlled by a timeclock to operate from 6 pm to 7 am. There are many times in Texas that this will allow fixtures to operate during daytime hours. *We recommend installing photocells as redundant controllers to prevent the fixtures from operating during daytime hours.*

Controls M&O

The current schedule for the district's air conditioning system is set so that units operate from 5 am – 4 pm with an override for afterhours use. The HVAC units in the school kitchens start at 6am during the cooling months. *Though the district is already vigilant about energy management, we recommend the district review this programming to minimize the amount of time the units are required to operate to reach setpoint each morning while still allowing the spaces to be comfortable for students and teachers to arrive at the beginning of the day.*

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. $1000 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	($63,000)		0	($63,000)
Year 1		$ 8,415.00	0	$8,415
Year 2		$ 8,415.00	0	$8,415
Year 3		$ 8,415.00	0	$8,415
Year 4		$ 8,415.00	0	$8,415
Year 5		$ 8,415.00	0	$8,415
Year 6		$ 8,246.70	($500)	$7,747
Year 7		$ 8,078.40	($500)	$7,578
Year 8		$ 7,910.10	($500)	$7,410
Year 9		$ 7,741.80	($500)	$7,242
Year 10		$ 7,573.50	($500)	$7,074
Year 11		$ 7,405.20	($1,000)	$6,405
Year 12		$ 7,236.90	($1,000)	$6,237
Year 13		$ 7,068.60	($1,000)	$6,069
Year 14		$ 6,900.30	($1,000)	$5,900
Year 15		$ 6,732.00	($1,000)	$5,732
			Internal Rate of Return	**8.58%**

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

3

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 Service Greater Than 10 kW

AVAILABILITY

This schedule is applicable to Delivery Service 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 or three-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, unless Retail Customer is eligible for and chooses a competitive meter provider. Any meter other than the standard meter provided by Company 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 contract arrangements may be required prior to Delivery Service being furnished, pursuant to Section 6.1.2.2 of this Tariff.

MONTHLY RATE

I. Transmission and Distribution Charges:		
Customer Charge	$3.50	per Retail Customer
Metering Charge	$18.41	per Retail Customer
Transmission System Charge		
Non-IDR Metered	$1.48	per NCP kW
IDR Metered	$1.99	per 4CP kW
Distribution System Charge	$3.97	per Distribution System billing kW
II. System Benefit Fund:	$0.000655	per kWh, See Rider SBF
III. Transition Charge:	See Riders TC1 and TC2	per Distribution System billing kW
IV. Nuclear Decommissioning Charge:	$0.044	per Distribution System billing kW, See Rider NDC
V. Transmission Cost Recovery Factor:	See Rider TCRF	
VI. Energy Efficiency Cost Recovery Factor:	See Rider EECRF	
VII. Competitive Meter Credit:	See Rider CMC	
VIII. Advanced Metering Cost Recovery Factor:	See Rider AMCRF	
Other Charges or Credits		
IX. Rate Case Expense Surcharge:	See Rider RCE	per Distribution System billing kW

COMPANY SPECIFIC APPLICATIONS

At Company's option, locations where the electrical installation has multiple connections to Company's conductors, due to Company facilities limitations or design criteria, may be considered one Point of Delivery for billing purposes.

DETERMINATION OF BILLING DEMAND FOR TRANSMISSION SYSTEM CHARGES

DETERMINATION OF NCP kW

The NCP kW applicable under the Monthly Rate section shall be the kW supplied during the 15 minute period of maximum use during the billing month.

DETERMINATION OF 4 CP kW

The 4 CP kW applicable under the Monthly Rate section shall be the average 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 4CP 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 will be billed at the applicable NCP rate under the "Transmission System Charge" using the Retail Customer's NCP kW.

DETERMINATION OF BILLING DEMAND FOR DISTRIBUTION SYSTEM CHARGES

DETERMINATION OF BILLING kW

For loads whose maximum NCP kW established in the 11 months preceding the current billing month is less than or equal to 20 kW, the Billing kW applicable to the Distribution System Charge shall be the NCP kW for the current billing month.

For all other loads, the Billing kW applicable to the Distribution System Charge shall be the higher of the NCP kW for the current billing month or 80% of the highest monthly NCP kW established in the 11 months preceding the current billing month (80% ratchet).

The 80% ratchet shall not apply to Retail Seasonal Agricultural Customers.

NOTICE

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

FARMERS ELECTRIC COOPERATIVE, INC. TARIFF FOR ELECTRIC SERVICE	Section: II	Tab – Page No. 2 – 2
Title: RATE SCHEDULES Part 1 – Billing Rates for Retail Service Applicable to All Service Areas	Approved: April 24, 2007 Amended: February 19, 2008 Effective: May 5, 2007	

202.1 General Service.

A. Availability.

Available in accordance with the Cooperative's Service Rules and Regulations to Members having a peak demand less than 50 kW for the twelve months ending with the current billing period.

If the Member's peak demand exceeds 50 kW, the Member will be reclassified to the Large Power rate for twelve months or until the Member's peak demand does not exceed 50 kW for twelve consecutive months ending with the current billing period.

B. Type of Service.

Single or three-phase service at the Cooperative's standard secondary distribution voltages, where available. The Cooperative shall determine when single-phase service is sufficient for the load to be connected and when three-phase service is required.

C. Monthly Rate.

	Power Supply	Distrib. Wires	Total
Base Charge			
Single-Phase	$0.00	$15.00	$15.00
Three-Phase	$0.00	$27.00	$27.00
All kWh, per kWh	$0.082592	$0.029998	$0.112590

Power Supply charges shall be adjusted by the power cost recovery factor

D. Minimum Charges.

1) Each billing period the single-phase Member shall be obligated to pay $20.00, whether or not any energy is actually used.

2) Each billing period the three-phase Member shall be obligated to pay $32.00, whether or not any energy is actually used.

E. Billing Adjustments.

This rate is subject to all billing adjustments.

FARMERS ELECTRIC COOPERATIVE, INC. TARIFF FOR ELECTRIC SERVICE	Section: II	Tab – Page No. 2 – 4
Title: RATE SCHEDULES Part 1 – Billing Rates for Retail Service Applicable to All Service Areas	Approved: April 24, 2007 Amended: February 19, 2008 Effective: May 5, 2007	

E. Minimum Charge.

Each billing period the Member shall be obligated to pay the Base Charge and Demand Charge as a minimum, whether or not any Energy is actually used.

F. Primary Service Discount.

If Electric Service under this Rate Schedule is provided at primary distribution voltage, the monthly rate for Demand and Energy charges shall be reduced by 3%. The Cooperative may meter at secondary voltage and estimate transformation loss.

G. Billing Adjustments.

This rate is subject to all applicable billing adjustments.

Tab 02-Sec-II-Part-1 RETAIL RATES (9-22-09).doc

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APPENDIX IV - PRELIMINARY ENERGY ASSESSMENT SERVICE AGREEMENT

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-opportunity for our communities and the state. Energy-efficient buildings reduce energy costs, increase available capital, spur econc growth, and improve working and living environments. The Preliminary Energy Assessment Service provides a viable strateg achieve these goals.

Description of the Service

The State Energy Conservation Office (SECO) will analyze electric, gas and other utility data and work with Community ISD, hereinafter referred to as Partner, to identify energy cost-savings potential. Tc 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 willir 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 provide a report which identifies no cost/low cost recommendations, Capital Retrofit Projects, a 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 t decision makers.

Acceptance of Agreement

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

Signature: [signature]
Date: 2/21/2011

Name (Mr./Ms./Dr.): Bud Nanyokas
Title: Superintendent

Organization: Community ISD
Phone: 972 843-8400

Street Address: PO Box 400
Fax: 972 843-8401

Mailing Address: Nevada, Texas 75173
E-Mail: nanyokab@communityisd.org

County: Collin

Contact Information:

Name (Mr./Ms./Dr.): Billy Myers
Title: CFO

Phone: 972 843-8400
Fax: 972 843-8401

E-Mail: myersb@communityisd.org
County: Collin

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.

[redacted]

APPENDIX V - TEXAS ENERGY MANAGERS ASSOCIATION (TEMA)

TEMA

ANNOUNCING!

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 VI - UTILITY CHARTS ON CD