



**ENERGY EFFICIENCY AND  
SUSTAINABILITY STATUS AT  
TEXAS FACILITIES  
COMMISSION (TFC)**

OCTOBER 15, 2014, SAEAG MEETING PRESENTATION

# TEXAS FACILITIES COMMISSION



Executive Director: Terry Keel

## Commissioners:

BETTY REINBECK, Chair

WILLIAM D. DARBY

VIRGINIA HERMOSA

BRANT C. INCE

MIKE NOVAK

JACK W. PERRY

ALVIN SHAW

# PRESENTER:

Farshad Shahsavary, P.E., CEM  
Energy and Engineering Manager

Texas Facilities Commission

1711 San Jacinto BLVD, Austin, TX 78748

Tel: 512-463-7366

Email: [farshad.shahsavary@tfc.state.tx.us](mailto:farshad.shahsavary@tfc.state.tx.us)



- Master of Science in Mechanical Engineering from University of Waterloo, Ontario, Canada, Texas Professional Engineer (P.E.), Certified Energy Manager (CEM)
- 25 years of progressive experience in HVAC Equipment Laboratory Testing, Testing and Balancing, Building Systems Commissioning, HVAC Design, Facility Controls Design/Installation/Programming, MEP Project Management, and Energy/Utility Management.
- Last eight years served as AISD Energy Manager and now TFC Energy and Engineering Manager.

# TEXAS FACILITIES COMMISSION (TFC)



What does Texas Facilities Commission do?

Pages 3 and 5 of this document explains:

[http://www.tfc.state.tx.us/divisions/commissionadmin/tools/E\\_Strat%20Plan%202015%20-%202019%20Approved%2006-18-2014.pdf](http://www.tfc.state.tx.us/divisions/commissionadmin/tools/E_Strat%20Plan%202015%20-%202019%20Approved%2006-18-2014.pdf)

Main Statues and Government Codes that Govern TFC :

<http://www.statutes.legis.state.tx.us/Docs/GV/htm/GV.2152.htm>

<http://www.statutes.legis.state.tx.us/Docs/GV/htm/GV.2165.htm>

<http://www.statutes.legis.state.tx.us/Docs/GV/htm/GV.2166.htm>

<http://www.statutes.legis.state.tx.us/Docs/GV/htm/GV.2167.htm>

<http://www.statutes.legis.state.tx.us/Docs/GV/htm/GV.2175.htm>

<http://www.statutes.legis.state.tx.us/Docs/GV/htm/GV.2269.htm>

TFC Web Site:

<http://www.tfc.state.tx.us/>

# TFC OFFICE ENERGY MANAGEMENT (OEM)



- **Objectives:** The objective and purpose of the Office of Energy Management (OEM) Program is to identify and implement strategies to achieve energy and other utility savings in all TFC Facilities and at the same time maintaining a healthy and comfortable working environment.
- All State agencies are mandated to conserve energy and utilities according to RP49 and SB700. The problem is that there is no direct funding associated with these mandates.
- To compensate for lack of FTEs and Resources by being creative such as using the existing maintenance resource, existing Deferred Maintenance Projects, future SECO LoanStar Loans, and maybe even future Performance Contracting projects.

<http://www.tfc.state.tx.us/>

<http://www.tfc.state.tx.us/divisions/facilities/prog/FMD/EnergyManagement.html>

# OFFICE OF ENERGY MANAGEMENT FOCUS



## Why Waste Resources?

<http://www.epa.gov/cleanenergy/energy-resources/calculator.html#results>

State of Texas - TFC										
Utility Use and Cost History										
Date	Electricity (kWh)	Total Elec Cost	Natural Gas (Therms)	Natural Gas Cost	Chilled Water (Ton Hour)	Chilled Water Cost	Water (CCF)	Water Cost	W. Water Cost	Total Utility Cost
FY13 Total	203,653,672	\$15,059,408	1,993,808	\$1,064,683	3,987	\$162,680	311,395	\$1,318,684	\$1,126,319	\$18,731,775
FY14 Total	186,688,525	\$13,550,462	2,225,508	\$1,411,130	3,600	\$181,718	353,214	\$1,344,477	\$1,101,800	\$17,589,587

- Utilities are Around 40% of TFC Total Budget; ~\$18 Million Buckaroos a Year.
- Or approximately \$85,000 every working day.
- Or close to \$10,000 per Work Hour ...**Shock????**

# EPA GUIDELINES FOR ENERGY MANAGEMENT



[http://www.energystar.gov/sites/default/files/buildings/tools/Guidelines%20for%20Energy%20Management%206\\_2013.pdf](http://www.energystar.gov/sites/default/files/buildings/tools/Guidelines%20for%20Energy%20Management%206_2013.pdf)

# TFC PAST ACHIEVEMENTS



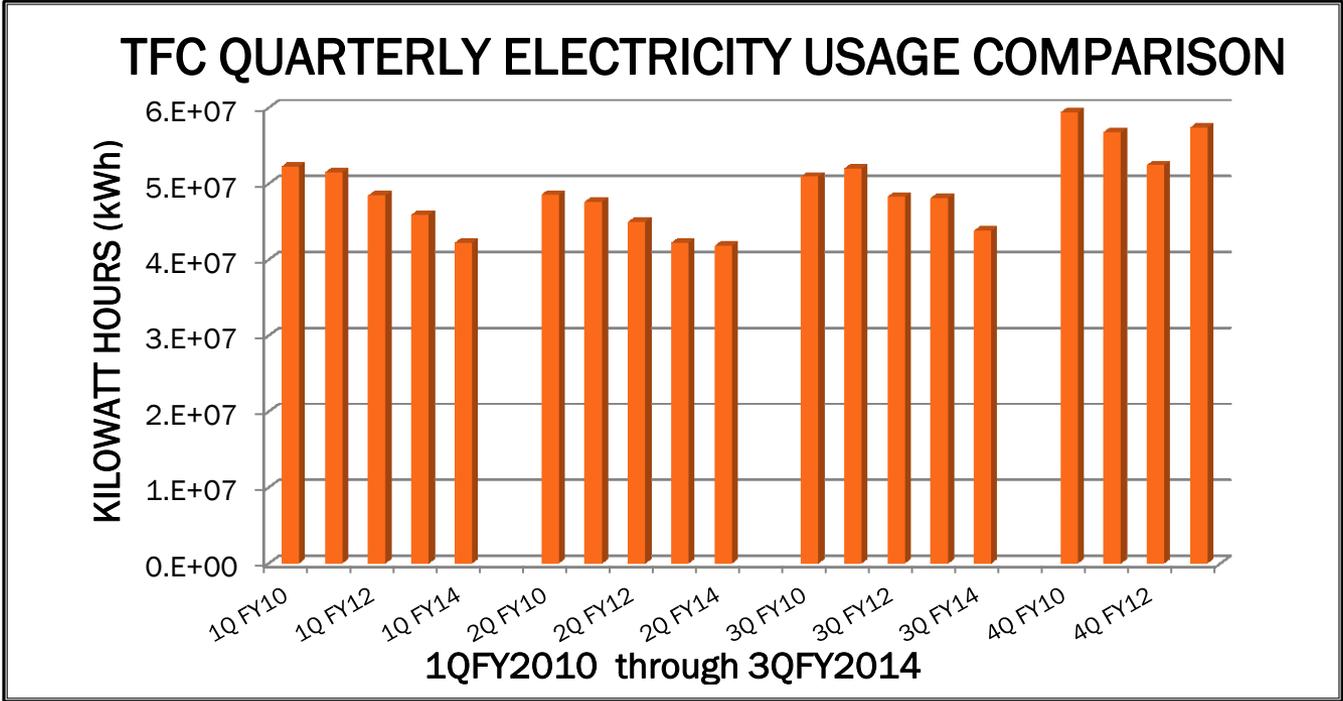
- Past LoanStar Projects:**

CONTRACT	LOAN DATE	CLOSE DATE	LOAN AMOUNT	ACTUAL DISBURSEMENTS	PRINCIPAL AND INTEREST COLLECTIONS	STATUS	SIMPLE PAYBACK YRS	COMMENTS
CL010	11/9/1990	8/19/1998	3,820,629.00	3,438,827.85	3,859,367.22	Paid-Off	3.3	Lighting , HVAC Equipment, BAS; Loan 100% utilized
CL074	9/1/1994	7/30/1999	3,602,876.00	362,680.29	403,529.00	Paid-Off	4.3	HVAC Equipment, BAS, Lighting; Loan 10% utilized
CL076	1/17/1995	7/30/1999	3,253,041.00	97,453.31	106,751.81	Paid-Off	5.5	HVAC Equipment, BAS, Lighting; Loan 3% utilized
CL078	1/17/1995	10/25/1999	5,990,107.00	608,076.61	678,812.42	Paid-Off	6.6	HVAC Equipment, BAS, Lighting; Loan 10% utilized
CL135	6/23/1999	9/29/2006	1,121,832.00	786,115.02	935,158.42	Paid-Off	6.5	HVAC Equipment, BAS, Lighting; Loan 70% utilized
CL228	8/27/2010	2013	4,639,559.00	2,196,903.31	413,316.76	Closed	6.7	HVAC Equipment, BAS, Lighting; Loan 47% utilized

- Only 33% of LoanStar Loan funds requested ever used, so potential to do more is there.**
- Most lighting fixtures have been replaced to T8s and LED. There are some T12 still remaining .**



# ARE PAST INVESTMENTS WORKING?!





# OEM CURRENT ACTIVITIES

- Ongoing Reporting like RP49, Commissioners report, and Utility Consumption.
- Working on EnergyStar Rating, SB700.
- Working internally and with Austin Energy to Improve the billing process.
- About \$20,000,000 in remaining past deferred maintenance projects under design and construction which include several energy related projects.
- About \$50,000,000 in FY14-15 deferred maintenance funding is being managed by TFC which include a lot of energy related projects. **Examples?**
- Office of Energy Management try to direct the deferred maintenance projects to maximize the energy saving items and also meet all of SECO guidelines.
- Office Energy Management is coordinating with Austin Energy to maximize the amount of Rebates.
- Summer Load Coop program with Austin Energy. \$18,000 in rebates since last summer.

# OTHER TFC SUSTAINABILITY PROGRAMS



- Daytime Custodial Service and MiniMax Recycling program started In August of 2010. This program is estimated to save State up to \$820,000 a year by serving 20,000 employees.
- State and Federal Surplus store managed by TFC, recycles and generates revenue for the state. <http://portal.tfc.state.tx.us/surplus/state/>
- Integrated Pest Management
- State Mandated *Xeriscaping to lower water consumption.*



# OEM FUTURE PLANS

- Complete EnergyStar rating of all of TFC facilities (SB700).
- Install meters and centrally monitor in real time of all utility meters using utility monitoring dashboard.
- Use performance contracting delivery method and LoanStar loan to increase our energy efficiency projects portfolio.
- Continuing Summer Load Coop program with Austin Energy and maybe even expanding the Demand Response program using other companies .
- Add a new in-house commissioning engineer position. Funding available no applicants yet.
- Add a new billing specialist to coordinate billing and reporting activities. Funding requested waiting for approval in the next session.
- Add Energy Stewards positions to coordinate activities between OEM and TFC Property Management division. No funding is currently available.
- Add Controls Technicians to coordinate activities between OEM and TFC Building Automation division. No funding is currently available.
- Training for Maintenance and Property Management staff. No funding is currently available.

# OEM BIGGGGGGGGGGGG GOAL



25% Reduction in Utility Usage or switching to renewable energy in the next 10 Years...~50,000,000 KWH per year reduction or transition to renewable  
**(Note: Personal and OEM Goal not TFC or SB700).**

<http://www.epa.gov/cleanenergy/energy-resources/calculator.html#results>

## IT IS POSSIBLE, NOT EASY



QA



