

Performance Contracting for Electricity Management

Finance, Audit, and Accountability
Committee

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What is purpose of briefing?

- Describe performance contracting and its phases
- Provide update on current projects
- Identify potential projects for future

What is Performance Contracting?

- Means to achieve energy savings and improve infrastructure without having an upfront cost
- Energy savings is guaranteed and savings used to repay cost of improvements
 - If savings not realized, contractor must repay cost of improvements
- State legislation allows local governments to enter into multi-year energy conservation projects with up to 15 year payback

What are the benefits?

- Reduce energy consumption and save money
- City able to make improvements for which funding would otherwise not be available
- Improvements can be made now with guarantee that energy savings will be achieved to pay for cost later
- Financial risk is reduced since contractor must pay instead of City paying if savings is not realized
- Energy conservation will help City meet Senate Bill 5 requirements to reduce energy consumption by 25% by end of calendar year 2006

What are the benefits?

- Improvements help update infrastructure and comply with current code requirements
- City owns equipment upon installation
- Operational efficiencies occur such as less maintenance or downtime, better system reliability and standardization of inventory

What are the risks?

- City failure to comply with contract requirements thus not realizing savings
 - In this case, City is liable for debt, not the contractor
 - Includes failure to keep temperature within established ranges, failure to maintain equipment in operational condition, etc.

What are the steps that we go through?

- Phase 1: Preliminary Energy Audit
 - Staff identify opportunities
 - Request for proposals
 - Competitive sealed proposal submitted by Energy Service Companies (ESCO) so savings and service approach can be compared
 - Pricing for improvements and minimum savings are identified for preliminary scope of work and cost to perform Detail Energy Audit identified

What are the steps that we go through?

- Phase 2: Detailed Energy Audit
 - Seek Council authorization to proceed with detail design
 - ESCO will further define and develop energy conservation measures
 - Investment grade: Project scope, cost and expected energy savings
 - Financing options evaluated
 - Procurement law requires Independent Third Party Engineering Review

What are the steps that we go through?

- Phase 2: Detailed Energy Audit (continued)
 - Baseline measures including calculations and electricity consumption established using 2-year TXU monitored meter consumption history
 - City will review and determine if any of the energy conservation measures should be implemented by ESCO
 - If none selected, City will pay ESCO for design cost only
 - Staff will seek additional Council authorization in order to proceed to construction

What are the steps that we go through?

- Phase 3: Construction and Monitoring
 - Seek Council authorization for construction and financing
 - Maximum price for turn-key construction is guaranteed
 - Energy reduction and savings is guaranteed
 - Savings is reduced consumption and demand only
 - Final engineering and construction implemented
 - Commissioning performed to document and certify installed equipment is operating properly

What are the steps that we go through?

- Phase 3: Construction and Monitoring (continued)
 - City and ESCO measure and verify that savings is occurring as project is being implemented and after completion
 - Utilize International Performance Measurement and Verification Protocol which standardizes the best techniques available for verifying energy savings
 - Repayment of loan will begin first quarter following completion of construction
 - Realized savings used to repay debt
 - If savings is not realized and City is in compliance with contract requirements, ESCO liable for debt payment
 - State law allows for repayment to occur over 15 years

What are the steps that we go through?

- Phase 3: Construction and Monitoring (continued)
 - Annually City considers whether to retain ESCO
 - Once satisfied that savings is being achieved ESCO will be released
 - ESCO nor performance bond liable for debt once released

Are there additional benefits?

- Texas Energy Efficiency Measures (TEEM) is TXU ED rebate program that provides incentives to reduce kWh consumption
 - Program has limited funds available and offers incentives on a first come basis
 - TXU awards incentive/rebate after one year has lapsed from completion of project and only after conducting audit to verify energy reduction

What auditing or verification occurs?

- During Phase 2 (Detailed Energy Audit), Independent Third Party review conducted
- During Phase 3 (Construction and Monitoring), City and ESCO measure and verify that savings is occurring as project is being implemented and after completion
- After project completion, Texas Energy Efficiency Measures (TEEM) rebate is available from TXU ED after TXU conducts audit to verify energy savings

What performance contracts do we have now?

- Project #1 – CR #033305 (December 8, 2003)
approved contract with TAC Americas
 - Project includes City Hall, OCMC, Central Library, MLK, Arts District Garage, and Mountain Creek Library
 - Improvements consist of lighting upgrades, new chillers, new cooling towers, variable speed drives, digital building controls, solar water heating, and staff training
 - \$9.5m funded through State Energy Conservation Office's Loan STAR Fund with repayment to begin March 2006 for 10 year period and to be repaid with electricity savings

What performance contracts do we have now?

- Project #1 – (continued)
 - Construction phase is 90% complete
 - Project expected to reduce electric consumption by 22.8 mkWh and save \$1.5m annually
 - TEEM rebate received for energy conservation as verified by TXU - \$525K received on August 16, 2005

What performance contracts do we have now?

- Project #2 – CR #043154 (November 10, 2004)
approved contract with Ameresco
 - Project includes Aviation and DWU Bachman Treatment Plant
 - 7 energy conservation measures identified including lighting retrofit, garage lighting controls, HVAC upgrades, escalator controls, vending machine controls, cooling tower water filtration and High Voltage Substation
 - Total project cost estimated - \$3.9m for Aviation only and \$8.8m for High Voltage Substation (being reviewed)

What performance contracts do we have now?

- Project #2 – (continued)
 - Status of project
 - Detail audit is 95% complete
 - Independent engineer review to begin soon
 - Anticipate seeking Council consideration in Fall 2005 for phase 3 – construction
 - Project expected to reduce electric consumption by 7.9 mkWh and save \$2.0m annually

What performance contracts do we have now?

- Project #3 – CR #043414 (December 8, 2004)
approved contract with Johnson Controls
 - Project includes Convention and Event Services
 - Improvements being considered include lighting upgrades, chiller, new cooling tower, etc.
 - Total project cost estimated at \$16.8m (being reviewed)

What performance contracts do we have now?

- Project #3 – (Continued)
 - Status of project
 - Detail audit is 85% complete
 - Independent engineer review to begin soon
 - Anticipate seeking Council consideration in Fall 2005 for Phase 3 – construction
 - Project expected to reduce electric consumption by 23.5 mkWh and save \$2.0m annually

What other projects do we anticipate?

- Additional projects that are being considered include
 - Water Utilities transmission
 - Cultural facilities such as Dallas Museum of Art and Meyerson Symphony Center
 - Police and Fire stations
 - Recreation Centers
 - Branch Libraries

Summary

- Performance contract for electricity management is means to achieve energy savings and infrastructure improvements without having upfront cost
- City staff will continue to bring performance contracts to City Council for consideration

Examples of Improvements



Replaced failing wooden cooling towers at City Hall, OCMC, and Central Library with state of the art efficient cooling towers.

Examples of Improvements

New pumps and improved pipe configuration used to replace deteriorated piping at City Hall, Central Library, MLK, Mountain Creek Library and OCMC.



Examples of Improvements



New variable speed drive chillers installed at City Hall and Mountain Creek Library to eliminate ozone depleting refrigerants and provide high efficiency chilled water.

Examples of Improvements

Solar Panels placed at City Hall, OCMC, and Central Library to heat water thus minimizing the boiler requirements.

