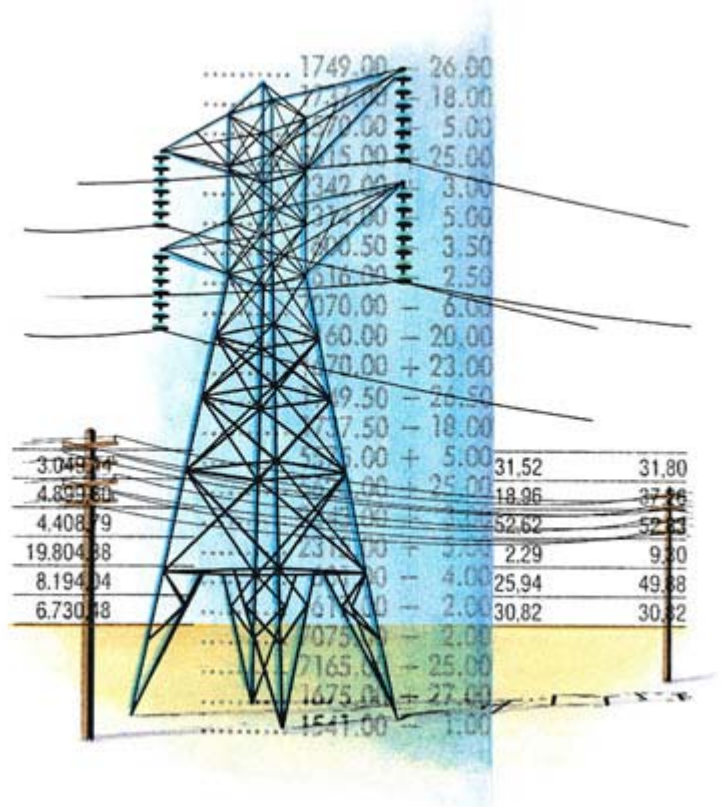




Energy Management

Electric Procurement Strategies

August 27, 2007





Presentation Outline

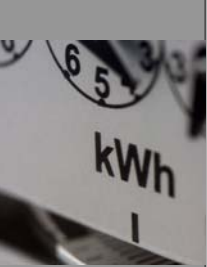
- Purpose
- Background
- City of Dallas procurement goals
- Procurement term
- Environmental goals
- Energy products
- Energy use characteristics
- Strategy to purchase electricity
- Procurement process
- Summary





Purpose

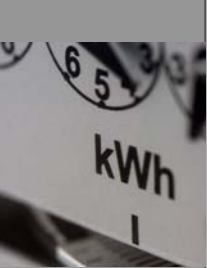
- This briefing addresses an upcoming decision to contract with a Retail Electric Provider (REP) for the total delivery of electricity to meet the City's power needs
 - Current contracts for electricity expire on Dec 31, 2007
- This will be for electricity only, and does not include infrastructure or maintenance
- Electricity for street lights will be included, however, it does not include maintenance of street lights
 - Oncor is responsible for and provides maintenance of street lights





Background

- Prior to deregulation, City purchased electricity from TXU Electric (regulated company)
- Texas Energy Market Structure changed – Senate Bill 7 (Sept 1999) created opportunities for competition in electric retail (deregulation) effective Jan 1, 2002





Background

Power Generation - Independent Power Producers and Investor Owned Utility Generators



Transmission & Distribution Service Provider (TDSP)

REGULATED



Oncor owns transmission & distribution infrastructure that serves City of Dallas.

Retail Electric Provider (REP)

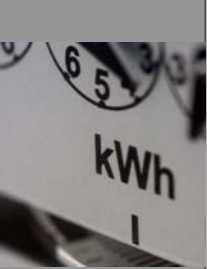
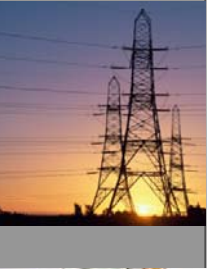
DEREGULATED



City is not a REP. City buys service of REP to supply us with electricity. REP passes TDSP charges to City.

City of Dallas – Customer and end user of electricity.





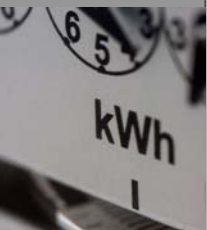
Background

- In 2001, City considered procuring electricity independently versus as member of aggregation
 - Texas Local Government Code allows us to join with other political subdivisions to negotiate purchase of electricity on our joint behalf, i.e. Aggregation
- Aug 2001, City delegated authority for electric procurement to Public Power Pool (P3) aggregation beginning in 2002 for all electric accounts (except street lights)
 - Public Power Pool (P3) is aggregation made up of about 100 members including Dallas County and DISD
 - Public Power Pool (P3) staff competitively bids and procures electricity for its members within its board's guidelines
- April 2006, Council opted to withdraw from Public Power Pool (P3) effective Dec 31, 2007 and bring energy procurement back in-house
- Parsons Brinkerhoff Consult, Inc. was engaged to assist City with Energy Management Plan including independent procurement



Background

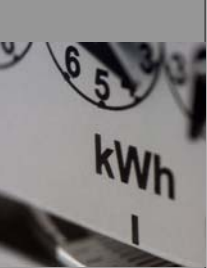
- Bringing energy procurement back in-house and purchasing electricity independently requires more action on part of City than was required when City participated in Public Power Pool (P3) aggregation
 - Council will direct purchasing strategies which have been delegated to Public Power Pool (P3) since 2001
 - More staff involvement required than when process was delegated to Public Power Pool (P3) and they managed process
 - City sets fundamental criteria for Retail Electric Providers (REP) to deliver reliable service and desired products
 - Process must have greater transparency and verification
 - Consider adjusting City process to be flexible enough to accommodate volatile nature of energy market





Background

- Typical City contract approval process does not allow City to maximize savings in electricity purchases, since contracting energy at lowest price requires ability to commit to providers within a day or less
 - Retail Electric Providers (REP) do not own generation – have to buy supply
 - Retail Electric Providers (REP) do not buy until they have a customer
 - Supply pricing dependent upon:
 - Generation market factors – changes day to day (unit availability/generation mix, etc.)
 - Fuel market factors – changes by the minute
 - Industry operates based on the New York Mercantile Exchange (NYMEX) gas futures contracts
 - One of the most volatile commodities (+/- 5% change in a day not uncommon)

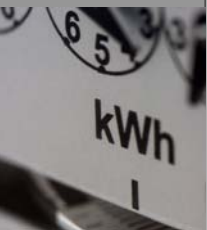
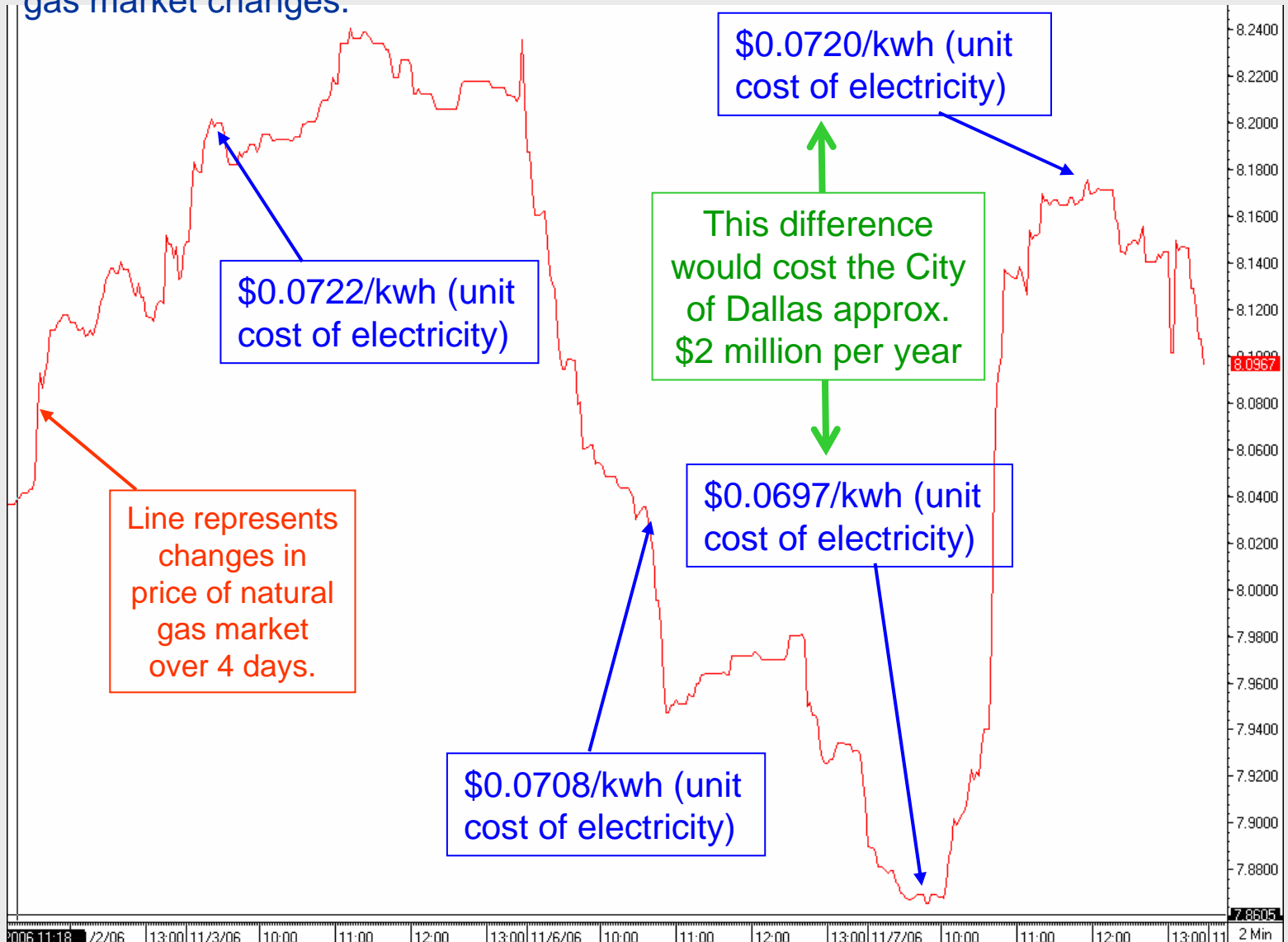




Background

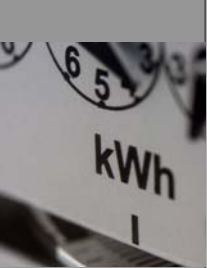
Relationship Between Natural Gas and Electricity Prices

The line on the chart represents changes in price of natural gas market over 4 days. Points along line represent change in price of electricity as price of natural gas market changes.





Background



- Pilot independent procurement for Street Light energy accomplished in Jan 2007 (does not include maintenance)
 - Energy for Street Lights had been purchased from TXU at Price To Beat rate which was ending on Jan 1, 2007
 - Used “heat rate” pricing with automatic locking (process described next page)
 - Awarded eleven-month electric services contract with Texas General Land Office to provide energy for City’s street lights
 - Contract is only for power and not for street light maintenance
 - Oncor is responsible for street light maintenance
 - Pilot street light procurement reduced City’s cost for street lights by 7% from Price To Beat rate
 - Resulted in the procurement of 40% renewable energy (an increase from 0 percent)
 - Contract term set to expire with all other City electric accounts Dec 31, 2007



Background

- Used Heat Rate Pricing to purchase energy for street lights
 - Retail Electric Providers (REP) bid with use of a heat rate formula; bid most advantageous to City selected and approved by Council

Heat Rate Pricing

$$\text{Electricity Price} = (\text{GP} \times \text{HR}) + \text{RA}$$

- Retail Electric Provider (REP) specifies **Heat Rate** and **Retail Adder** in their bid
 - **HR – Heat Rate** relates gas input to electricity output; efficiency rate of power plant
 - **RA – Retail Adder** accounts for ancillary services, Retail Electric Provider (REP) profit, other costs to get retail power
- **Gas price** – based on closing price of natural gas as traded on NYMEX
 - **GP – Gas Price** automatically determined and locked over specific number of days following Council authorization; and then applied to Heat Rate formula to determine price of electricity



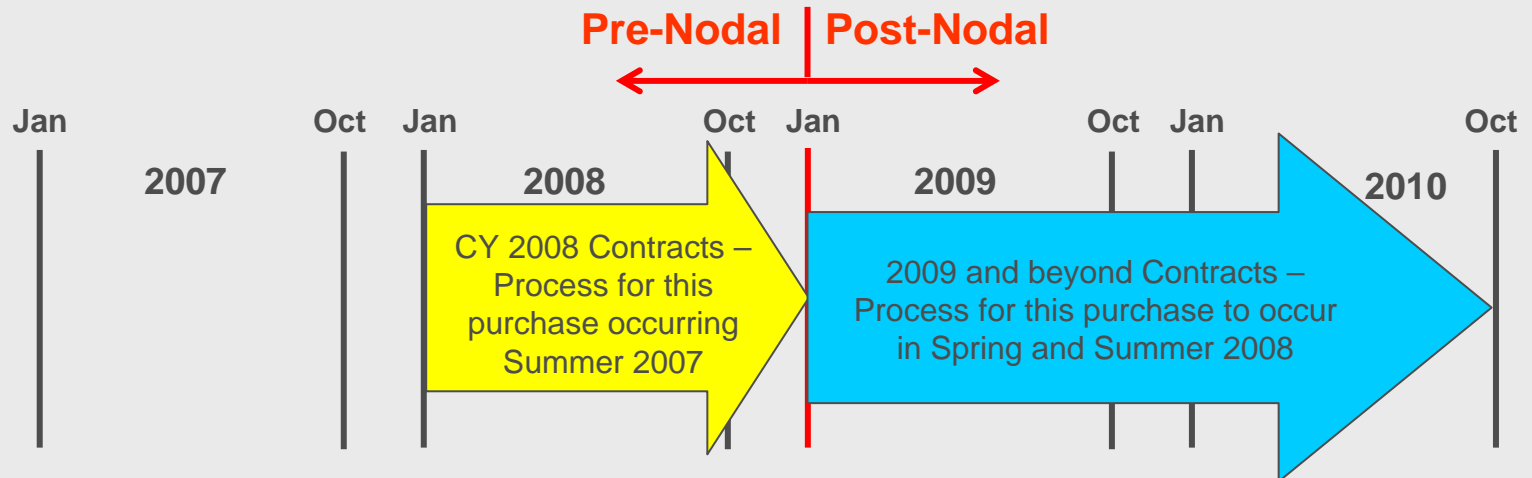
City of Dallas Procurement Goals

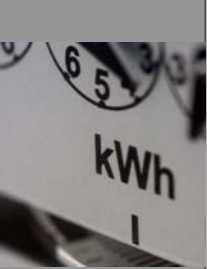
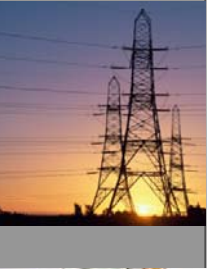
- Procure reliable power
 - Provider must be operationally and financially reliable
- Achieve best price that meets Council policy direction
 - Timing of procurement / budget certainty
 - Shift load to time of day that best price is available
 - Incentives to City users for reduced consumption
- Promote environmental stewardship
 - Low/No emission and renewable energy in power supply purchased
- Ensure transparent process and transactions
 - Selection of providers
 - Auditable pricing
 - Billing capabilities and process – timely and easily understood invoicing and reporting
 - Acceptable terms and conditions



Procurement Term

- Recommend 12-month contract for electricity through CY 2008
- ERCOT plans to implement Nodal pricing in Jan 2009
 - Higher power costs to be charged in nodes perceived to be causing problem during periods of congestion
 - Metropolitan areas without local generation will bear brunt of congestion charges, i.e. Dallas - Fort Worth Metroplex
 - Since effect of Nodal is not fully known yet, contract pricing into 2009 would be negatively impacted
 - City should contract only through 2008 to allow Retail Electric Providers (REP) and City to better understand Nodal impacts





Environmental Goals for Electric Purchases

- 40% minimum renewable sources for electric purchase
 - Use of renewable energy credits
 - A certificate guaranteeing that energy being purchased is generated from a Texas renewable energy source
 - Only means of guaranteeing energy is renewable
 - Retail Electric Providers (REP) must be able to provide auditable portfolio of generation sources
 - Encourages development of renewable energy sources
 - Discourages development of less desirable sources
 - Premium charge for purchasing energy from renewable sources
 - Street Light – 40% renewable – approximately \$200,000 of \$12.8m contract, or 1.6% of cost
 - If we include 40% renewable energy credits in this purchase, it is estimated that additional cost will be about \$1m, or 1.2% of cost



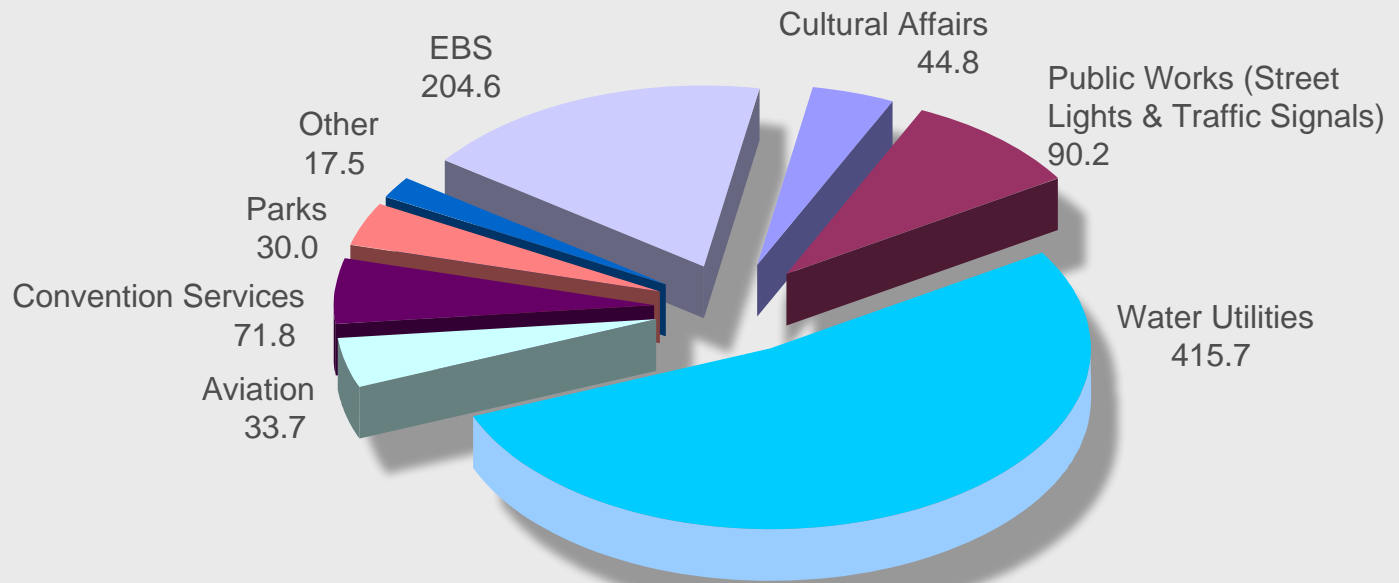
Energy Products

- There are a variety of electricity pricing offerings in the market
 - Recommended – Heat Rate – represents power generator's efficiency in converting fuel to electricity
 - Lower heat rates = increased power plant efficiency
 - Price calculated as $(\text{Heat Rate} \times \text{Cost of Gas}) + \text{Adder}$
 - Price moves with natural gas market until locked in
 - Fixed price rate – one rate for duration of contract (no incentive for load shifting)
 - Market clearing price of energy (MCPE) - price for energy is variable rate that changes every 15 minutes; customer pays variable market rate based on backwards-looking index (greater risk, and only beneficial for infrequent and highly variable loads)
 - Hybrids (more complex)
 - Fixed price block + MCPE - allows you to lock up portions of your load in fixed price increments while participating in the MCPE market for usage in excess of base load
 - Time of use pricing (on- and off-peak) - fixed or heat rate but differs in time of day such that if entity is able to shift load to lower priced times, overall energy costs can be lowered
 - Seasonal pricing - could participate in MCPE based products in winter time and heat rate and/or fixed price products in summer; decreases some of spring and fall MCPE based risks



City of Dallas Energy Use Characteristics

City of Dallas Electric Usage (MWH)
Calendar Year 2006
Total = 908.3 MWH



City of Dallas uses approximately the same amount of electricity as 38,000 single-family households annually.



City of Dallas Energy Use Characteristics

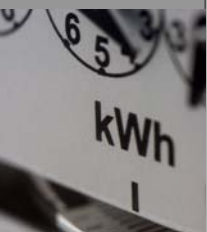
- City has approximately 2,400 individual electric accounts and electric invoices for water facilities/pumping, street lights, traffic signals, levee pumps, and buildings (convention center, recreation centers, fire stations, City Hall, cultural facilities, etc.)
 - City accounts differ fundamentally from typical residential service accounts
- Meters/accounts should be grouped so that best energy product can be targeted to each group of meters to achieve best price and conservation incentives
 - Demand Meter – records total use and highest rate of use in a 15 minute period during billing period (peak usage)
 - Non-Demand Meter – records total use only and does not provide information on peak use or breakdown of use over billing period
 - Unmetered – electric charges are based solely on expected use
 - IDR – Interval Data Recorder – records total use and rate of use every 15 minutes (meter allows for time-of-day pricing)



City of Dallas Energy Use Characteristics

Load Groups for Bidding

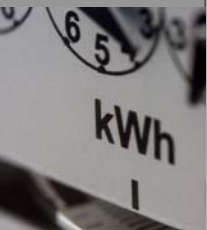
- Separate City load into three different groups for bidding based on type of meters
 - Better pricing structures
 - Time-of-use pricing for some Interval Data Recorder (IDR)
 - Encourages demand management and conservation
 - More competition to serve the loads
- Breaking into three groups enhances City's buying power and does not diminish it
- Final bid evaluations based on overall best value to City for each group





City of Dallas Energy Use Characteristics

Recommended Load Groupings



| Group | Meter Type | % of Total Usage | # of Accts. | Representative City Facilities/Uses |
|-------|-------------------------------------|------------------|-------------|--|
| A | Demand Meters | 11% | 512 | Fire Stations, Rec Centers, Police Facilities, Branch Libraries, Levee Pumps |
| B | Non-Demand Meters and Unmetered | 11% | 1842 | Streetlights, Traffic Signals |
| C | Interval Data Recorder (IDR) Meters | 78% | 80 | DWU, Convention Center, Main Library, City Hall |



Strategy to Purchase Electricity for Groups A and B

- Demand meters, and non-demand and unmetered
- Heat rate with automatic lock established in same manner as was done for Street Lights in Jan 2007

$$\text{Electricity Price} = (\text{GP} \times \text{HR}) + \text{RA}$$

- Retail Electric Provider (REP) specifies **Heat Rate** and **Retail Adder** in their bid
- **Gas price** – based on closing price of natural gas as traded on NYMEX over a specified number of days following Council authorization of Retail Electric Provider (REP)
- Automatic price lock for groups A and B will occur for all of CY 2008; this is 1st price lock in process
 - Mandatory lock; no discretion of when to lock
- These two groups represent 22% of load



Strategy to Purchase Electricity for Group C

- Interval Data Recorder (IDR) meters
- This group represents 78% of load
- Heat rate pricing with dual rates for on and off-peak periods for some loads
 - Provides incentives for City to maximize load shifting from peak to off-peak for cost-savings
- Retail Electric Provider bids Heat Rate formula for Group C
 - Retail Electric Provider (REP) specifies **Heat Rate** and **Retail Adder** in their bid
 - **Gas price** – based on price of natural gas as traded on NYMEX, but recommend locks be executed by City Manager (with consultant input) and within Council established guidelines



Strategy to Purchase Electricity for Group C

- Guidelines to be used for locking gas price are recommended by Parson Brinkerhoff based on experience with other customers and City's risk tolerance
 - Movement within Natural Gas market will trigger action by City if market decreases by 10% or increases by 5% from previous lock
 - Public Power Pool (P3) has previously exercised similar strategy – Risk 5% increase in rates in return for opportunity to see rates decrease 10%
 - Multiple locks over several months will hedge against fluctuations in market
 - Flexibility to lock at any time as long as within guidelines

| Lock | Group | Pricing Approach | % of Group C Locked | Downside Trigger | Upside Trigger | When Locked |
|------|-------------|--------------------------|---------------------|---|--|----------------------|
| #2 | C (partial) | Heat Rate Time-of-Use | 34% | Decrease 10% or more from baseline | Increase 5% or more from baseline | No later than Oct 20 |
| #3 | C (partial) | Heat Rate Time-of-Use | 33% | Decrease 10% or more from previous lock | Increase 5% or more from previous lock | No later than Dec 31 |
| #4 | C (partial) | Heat Rate Time-of-Use | 33% | Decrease 10% or more from previous lock | Increase 5% or more from previous lock | No later than Feb 28 |



Strategy to Purchase Electricity for Group C

| Example of Guidelines when Baseline Set at 10¢ per kWh | | | |
|---|--|--|--|
| Baseline set when final pricing is taken from Retail Electric Providers (REP) | Lock #2 – 34% of Group C No later than Oct 20 th | Lock #3 – 33% of Group C No later than Dec 31 st | Lock #3 – 33% of Group 3 No later than Feb 28 th |
| | | | +5% = 11.5763¢ |
| | | +5% = 11.025¢ | |
| | + 5% = 10.5¢ | | |
| 10¢ per kWh | | | |
| | <10%> = 9¢ | | |
| | | <10%> = 8.1¢ | |
| | | | <10%> = 7.29¢ |



Strategy to Purchase Electricity for Group C

- Alternatives for locking Group C after Council authorizes Retail Electric Provider (REP) contract
 - Automatic lock occurs in same manner as was done with Street Lights and as recommended for Groups A and B; no discretion
 - Lock occurs within established guidelines at discretion of City Manager with consultant input
 - Lock occurs solely at discretion of City Manager with consultant input
- For this procurement, recommend delegation of authority to City Manager to lock pricing within guidelines and after Council awards contracts





Procurement Process

■ Multi-step process

- ✓ 1st step – Developed and advertised request for proposal (RFP) during July
 - All 94 Retail Electric Providers (REP) registered in State were notified of request for proposal (RFP)
- ✓ 2nd step – Proposals submitted on Aug 8th
 - Six Retail Electric Providers (REP) submitted proposals
- ✓ 3rd step – Consultants and staff reviewed proposals and short-listed
 - 4th step – Negotiate contract terms with short-listed Retail Electric Providers (REP)
 - 5th step – Request pricing from remaining Retail Electric Providers (REP)
 - 6th step – City Council authorizes contract
 - 7th step – Delegate authority to City Manager to lock prices within Council guidelines

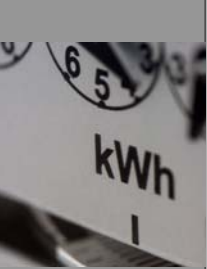
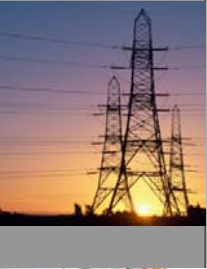


Summary

- Continue use of multi-step procurement with specifications developed by City
- Utilize three load groups based on type of meters and usage
 - Groups A and B – Heat rate with automatic lock
 - Group C – Heat rate with time of use pricing
- Award 12-month contracts
- Include environmental initiatives of 40% renewable
- Receive and evaluate (staff and consultants) pricing from short-listed Retail Electric Providers (REP)
- Approval of contracts by City Council
 - Groups A and B pricing will lock automatically following Council approval
 - Authorize City Manager to lock pricing for group C over 6 months and within Council guidelines for CY 2008
- Benefits of this approach
 - Council involvement more than with Public Power Pool (P3)
 - Flexible process allows City to better handle volatile market
 - Shorter term allows continued evolution of City strategies
 - Encourages development of renewable energy sources and discourages development of less desirable sources
 - Three contracts will lead to greater competition and lower prices for each group of meters
 - Opportunity to reduce cost such as through load shifting



Appendix



■ Criteria for Short-Listing Retail Electric Providers (REP)

- Financial stability
- Ability to provide renewable energy credits
- Agreement to contract terms
- Level of experience
- Contract imbalance allowance
- Assurance of timely and accurate invoices
- Invoicing per requirements
- Customer service

■ Evaluation Team

- Robert Brashear – Parsons Brinkerhoff Consult, Inc.
- Mike Brasovan – THG Energy Solutions, LLC
- Annette Van Brunt – Van Brunt & Associates, Inc
- Jesse Dillard – City of Dallas