

# Memorandum



CITY OF DALLAS

DATE August 8, 2008

TO Finance, Audit and Accountability Committee -  
Mitchell Rasansky, Chair; Jerry Allen, Vice-Chair; Mayor Pro Tem Elba Garcia;  
Vonciel Jones Hill; Angela Hunt; Ron Natinsky; and David Neumann

SUBJECT Energy Management

Attached is a copy of the Energy Management: Electric Procurement Strategies briefing for your consideration at your August 12<sup>th</sup> meeting.

Should you have any questions, please contact me.

  
David O. Brown,  
Interim Assistant City Manager

## Attachment

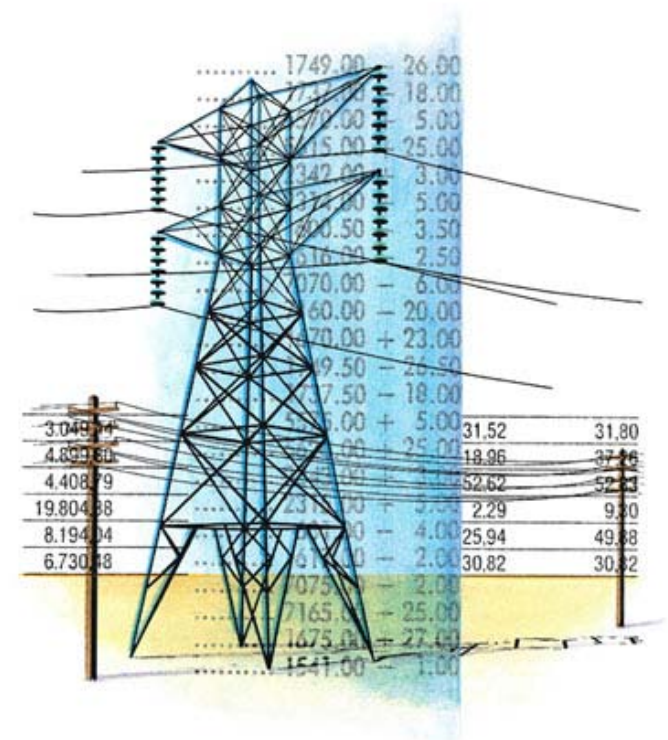
c: Mayor and Members of the City Council  
Mary K. Suhm, City Manager  
Ryan S. Evans, Assistant City Manager  
Ramon F. Miguez, P.E., Assistant City Manager  
Jill A. Jordan, P.E., Assistant City Manager  
A. C. Gonzalez, Assistant City Manager  
David Cook, Chief Financial Officer  
Jack Ireland, Director, Equipment and Building Services

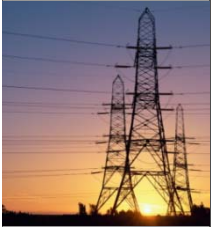


# Energy Management

## Electric Procurement Strategies

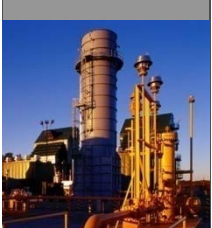
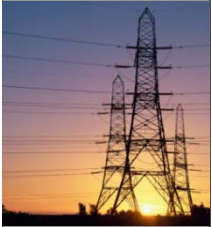
Finance, Audit and Accountability Committee  
 August 12, 2008





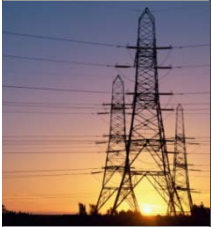
## Presentation Outline

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



## Purpose

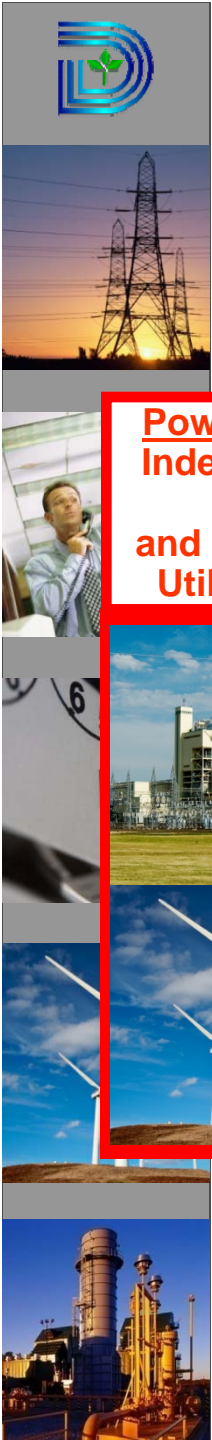
- This briefing addresses an upcoming decision to contract with a Retail Electric Provider (REP) for the total delivery of electricity to meet the City's power needs
  - Current contracts for electricity expire on Dec 31, 2008
- This contract will be for electricity only, and does not include infrastructure 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 (cost regulated by PUC)



## 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**

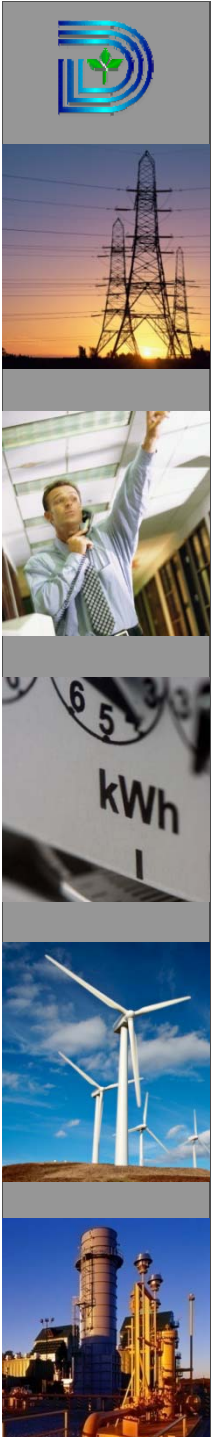
**Transmission & Distribution Service Provider (TDSP)**  
**REGULATED**

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

**Retail Electric Provider (REP)**  
**DEREGULATED**

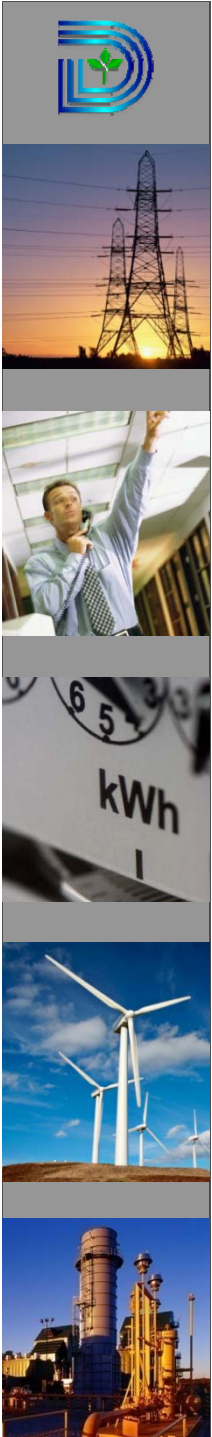
City is not a REP. City buys service of REP to supply us with electricity. REP passes TDSP charges to City.

**City of Dallas – Customer and end user of electricity.**



## Background

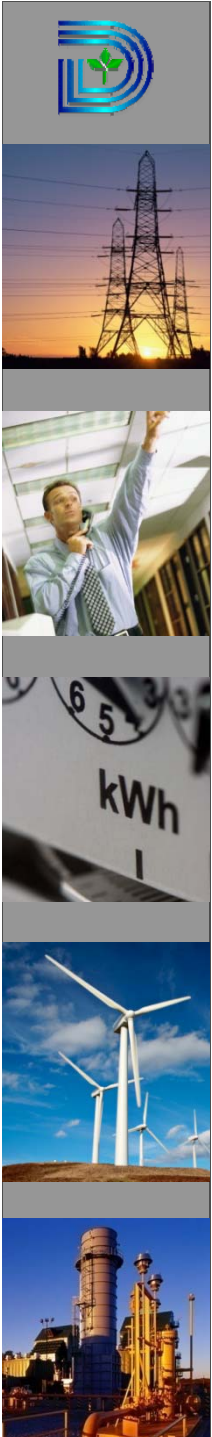
- In 2001, City considered procuring electricity independently versus as member of aggregation
  - Texas Local Government Code allows us to join with other political subdivisions to negotiate purchase of electricity on our joint behalf, i.e. Aggregation
- Aug 2001, City delegated authority for electric procurement to Public Power Pool (P3) aggregation beginning in 2002 for all electric accounts (except street lights)
  - Public Power Pool aggregation is made up of about 100 members including Dallas County and DISD
  - Public Power Pool staff competitively bids and procures electricity for its members within its board's guidelines



## Background

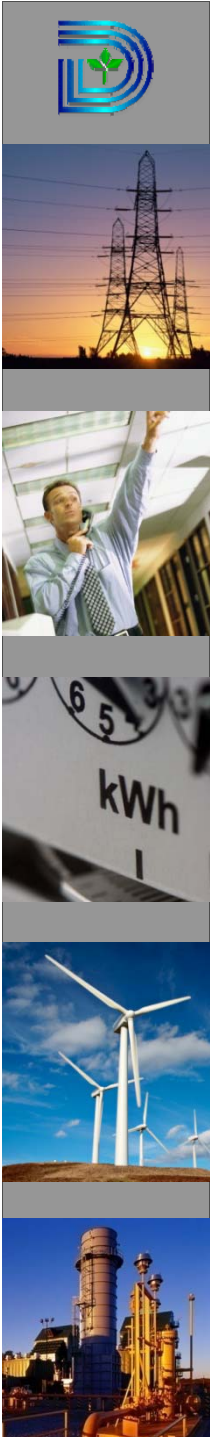
- April 2006, Council opted to withdraw from Public Power Pool effective Dec 31, 2007 and bring energy procurement back in-house
  - Independent procurement allowed City to set our own priorities and define our contract terms
  - City is large enough to obtain lowest market prices without aggregation with other jurisdictions
  - Cost to be a member of aggregation was over \$400,000 annually and increasing
- Parsons Brinkerhoff Consult, Inc. was engaged to assist City with Energy Management Plan including independent procurement
- Jan 2007, City piloted an independent and competitive process for the purchase of power for the City's street lights
- Sept 2007, Council authorized 3 separate 12-month electric services contracts and authorized the City Manager to lock prices with the selected REPs within guidelines
  - Current contracts for electricity expire on Dec 31, 2008





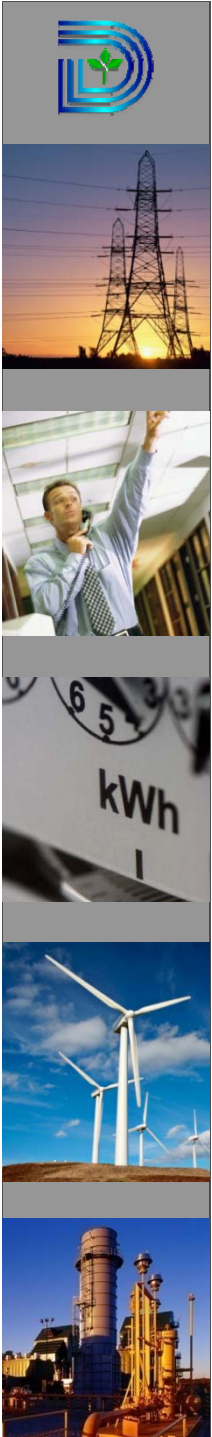
## City of Dallas Procurement Goals

- 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



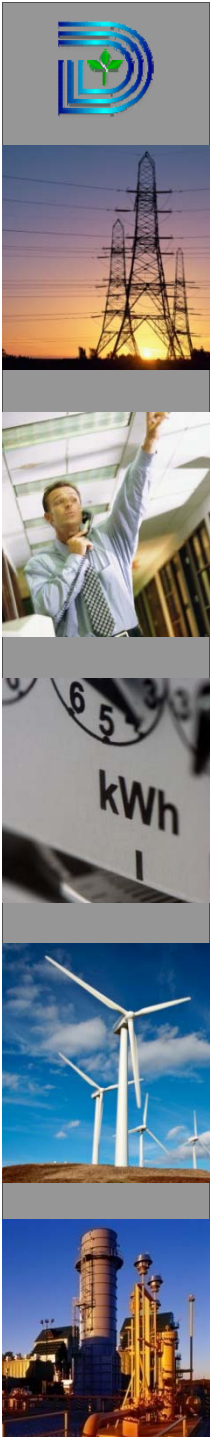
## Energy Use Characteristics

- 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)



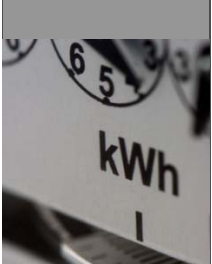
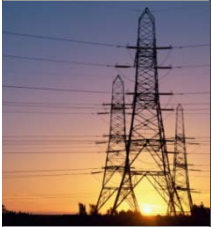
## Energy Use Characteristics

- Total City load was separated 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



## Energy Use Characteristics

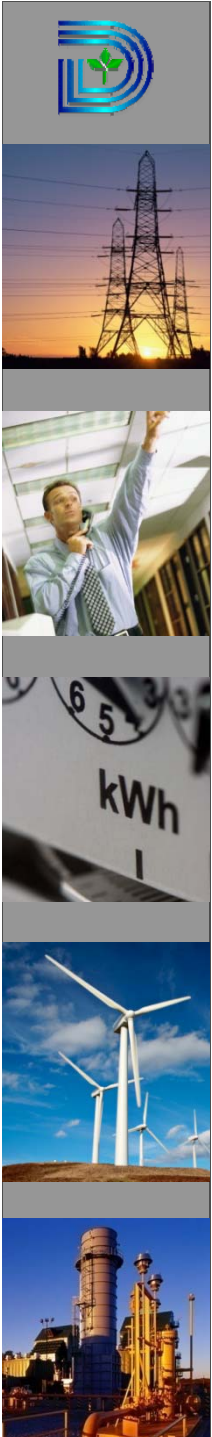
Group	Meter Type	% of Total Usage	# of Accts.	Representative City Facilities/Uses	Current REP
1	Interval Data Recorder (IDR) Meters	77%	84	DWU, Convention Center, Main Library, City Hall	Suez Energy
2	Demand Meters	11%	512	Fire Stations, Rec Centers, Police Facilities, Branch Libraries, Levee Pumps	Gexa Energy
3	Non-Demand Meters and Unmetered	12%	1842	Streetlights, Traffic Signals	Suez Energy



## Energy Products

- There are a variety of electricity pricing offerings in the market
- Consultant recommends using Heat Rate pricing, that 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
- Dallas used Heat Rate pricing to purchase energy for street lights in Jan 2007 and for all City electric accounts in Sept 2007



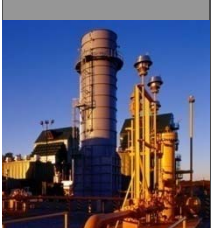
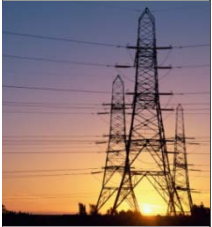


## Energy Products

- REPs bid with use of a Heat Rate formula; bid most advantageous to City selected

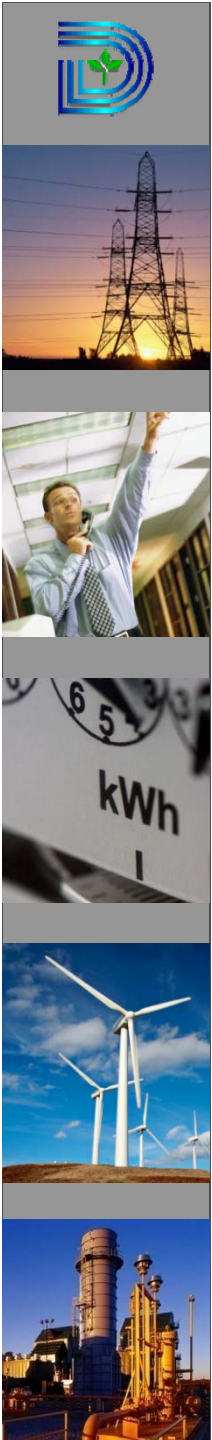
$$\text{Heat Rate Pricing: Electricity Price} = (\text{GP} \times \text{HR}) + \text{RA}$$

- 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, REP profit, Renewable Energy Credits (40% of total load), Nodal pricing, and other costs to get retail power
  - **Gas price** – based on closing price of natural gas as traded on NYMEX



## Approval Process

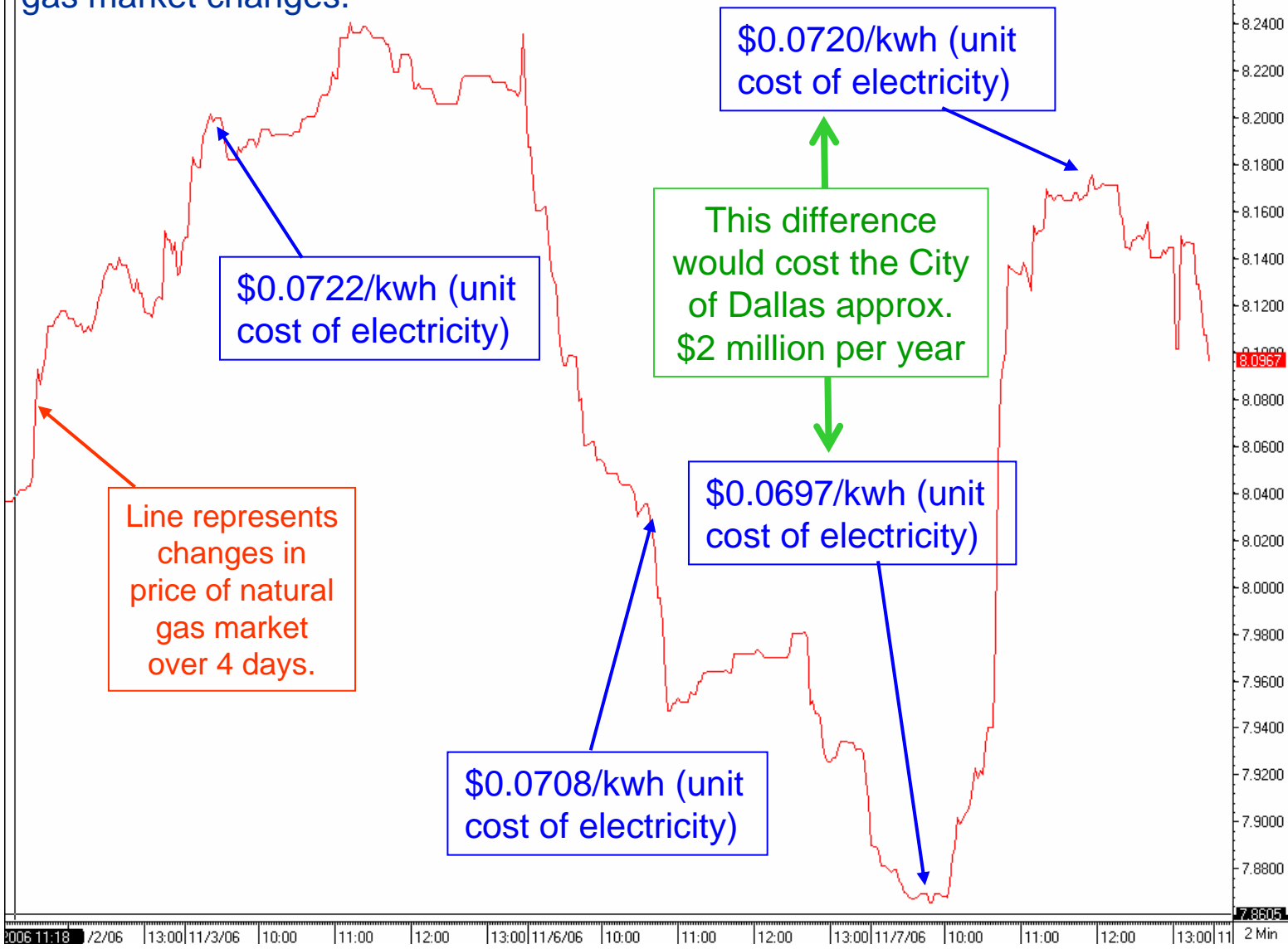
- Typical City contract approval process does not allow City to maximize savings in electricity purchases, since contracting energy at lowest price requires ability to commit to providers within a day or less
  - REPs do not own generation – have to buy supply
  - REPs do not buy until they have a customer
  - 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)
- City approval process must allow maximum flexibility

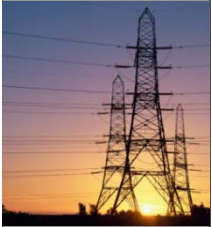


# Approval Process – Example

## Relationship Between Natural Gas and Electricity Prices

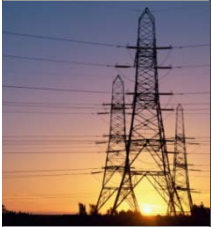
The line on the chart represents changes in price of natural gas market over 4 days. Points along line represent change in price of electricity as price of natural gas market changes.





## Approval Process

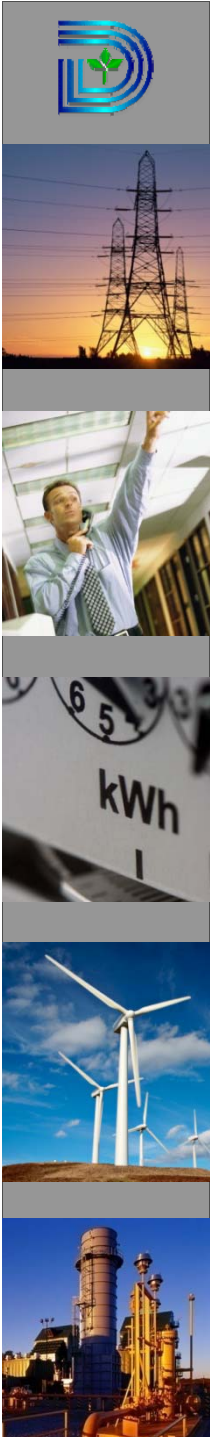
- Request for Proposals was issued in June 2008
  - All 301 REPs registered in the State of Texas were notified
  - Six REPs submitted proposals
- Parsons Brinkerhoff and City staff evaluated the proposals using the following criteria
  - Financial stability
  - Ability to provide renewable energy credits
  - Agreement to contract terms
  - Level of experience
  - Contract imbalance allowance
  - Assurance of timely and accurate invoices
  - Invoicing requirements
  - Customer service



## Approval Process

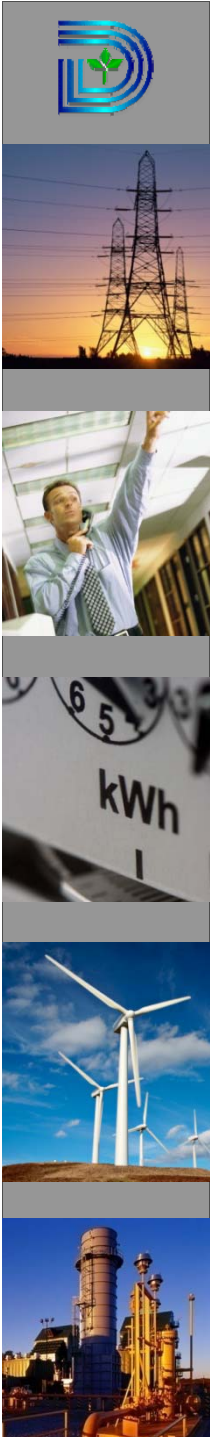
- Short-listed REPs will submit final offers
  - Constellation New Energy Power
  - Gexa Energy, L.P.
  - SUEZ Energy Resources NA, Inc.
  - Texas General Land Office
- Final evaluation criteria
  - Total delivered cost of power – 70%
  - Final contract terms – 20%
  - Invoicing requirements – 10%





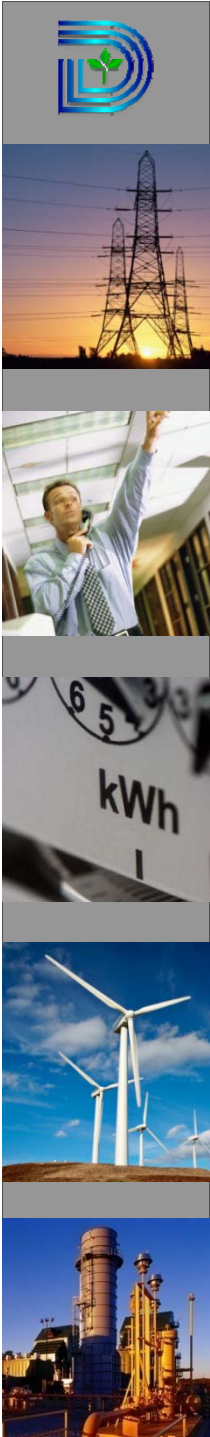
## Strategy to Purchase Electricity for Groups 2 and 3

- Includes demand meters, and non-demand and unmetered
  - These two groups represent 23% of load or about 2,350 accounts
- Heat rate with automatic lock established in same manner as was done for Street Lights in Jan 2007, and Group 2 and 3 accounts in Sept 2007
- Term to be determined at final pricing (12, 21, 24, 33, or 36 month)
- Council will authorize contract for each group with a specific REP based on Heat Rate formula received day before Council action
- Automatic price lock for Groups 2 and 3 will occur the 5 trading days after Council approval for entire term of contract
  - Mandatory lock; no discretion of when to lock



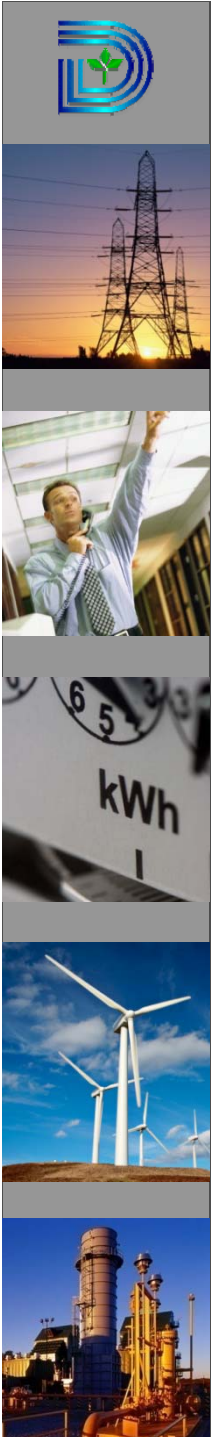
## Strategy to Purchase Electricity for Group 1

- Includes Interval Data Recorder (IDR) meters
  - This group represents 77% of City load
- Heat rate pricing with dual rates for on and off-peak periods for some loads
- Heat rate with locks delegated to City Manager within established guidelines in similar manner to locks for Group 1 in Sept 2007
- Term to be determined at final pricing (12, 21, 24, 33, or 36 month)
- Council will authorize contract with a specific REP based on Heat Rate formula received day before Council action
- Price locks for Group 1 delegated to City Manager and will occur within established guidelines as recommended by consultants



## Strategy to Purchase Electricity for Group 1

- Guidelines to be used for locking gas price are recommended by Parson Brinkerhoff based on experience with other customers and City's risk tolerance
  - Multiple locks over several months will hedge against fluctuations in market
  - Flexibility to lock at any time as long as within guidelines
  - Movement within Natural Gas market will trigger action by City
  - Sept 2007 process for locking Group 1 price consisted of 3 separate locks
    - The locks were triggered when the price of Natural Gas fluctuated either up 5% or down 10% from the previous lock
      - Possible increase of 15% or decrease of 30% from baseline for 3<sup>rd</sup> lock
    - Public Power Pool had exercised similar strategy – Risk 5% increase in rates in return for opportunity to see rates decrease 10%
  - Group 1 “price lock” guidelines need adjustment for multi-year contract
    - Locks for 4-month intervals occur as Natural Gas prices fluctuate from the established baseline set for each 4-month interval on the day of contract award (3 locks per year will occur)
    - Locks for each 4-month period must occur at least 30 days prior to start of that period
    - Upper and lower triggers are set at 15% increase and 30% decrease when more than 8 months away from the start of the 4-month period
    - These triggers narrow to 5% increase and 10% decrease when approaching the 30 days prior to the 4-month period



## Summary

- Utilize three load groups based on type of meters and usage
  - Group 1 – Heat rate with time of use pricing with multiple unscheduled locks within guidelines
  - Groups 2 and 3 – Heat rate with automatic lock
- Receive and evaluate (staff and consultants) pricing from short-listed REPs on August 26<sup>th</sup>
- City Council approval on August 27<sup>th</sup> of contracts for Groups 2 and 3 based on Heat Rate formula and final pricing to lock automatically on five trading days following Council action
- City Council approval on August 27<sup>th</sup> of contract for Group 1 based on Heat Rate formula and Natural Gas price locks delegated to City Manager within established guidelines
- City Manager will report progress and pricing at each step through the final lock of City's electricity load for CY2009