Memorandum

DATE  March 29, 2019

TO  Honorable Members of the Government Performance & Financial Management Committee: Jennifer S. Gates (Chair), Scott Griggs (Vice Chair), Sandy Greyson, Lee M. Kleinman, Philip T. Kingston, Tennell Atkins, Kevin Felder

SUBJECT  Energy Policy, Strategy, and Electricity Procurement

On April 1, Errick Thompson, Director of Building Services Department, will present a briefing to the Government Performance and Financial Management Committee on Energy Policy, Strategy, and Electricity Procurement. The briefing materials are attached for your review.

If you have any questions or concerns, please contact my office at (214) 670-3390.

M. Elizabeth Reich
Chief Financial Officer

Attachment

c:  Honorable Mayor and Members of the City Council
    T.C. Broadnax, City Manager
    Chris Caso, City Attorney (Interim)
    Carol Smith, City Auditor (Interim)
    Biliereae Johnson, City Secretary
    Preston Robinson, Administrative Judge
    Kimberly Bizor Tolbert, Chief of Staff to the City Manager

    Majed A. Al-Ghafry, Assistant City Manager
    Jon Fortune, Assistant City Manager
    Joey Zapata, Assistant City Manager
    Nadia Chandler Hardy, Assistant City Manager & Chief of Resilience
    Laila Alequresh, Chief Innovation Officer
    Directors and Assistant Directors

“Our Product is Service”
Empathy | Ethics | Excellence | Equity
Energy Policy, Strategy, and Electricity Procurement

Government Performance and Financial Management Committee
April 1, 2019

Errick Thompson, Director
Building Services Department

Michael Ayala, CEC
Executive Director
Tradition Energy

City of Dallas
Purpose

• Review Green Energy Policy
• Provide an update on and seek support for electricity procurement consistent with the policy
Outline

• Brief background
• Proposed Green Energy Policy
• Electricity market and opportunities
• Next Steps
Background

Electricity expenses have declined over 26% over the last 10 years through lower rates and consumption.

<table>
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</tr>
<tr>
<td>FY18</td>
<td>$54,222,127</td>
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Approximate Components of Electricity Bill
(all paid through the monthly electricity bill)

- Generation: 54%
- Taxes (Regulated): 2%
- Oncor Transmission and Distribution (Regulated): 35%
- Retail Electricity Provider: 9%

See appendix for regulated and deregulated fees
Background

- 2008 contract included renewable energy credits (RECs) for 40% of the City’s consumption
- Current contract expires May 31st and includes RECs to offset 100% of our electricity consumption
- City of Dallas is highly ranked among U.S. Environmental Protection Agency’s Green Power Partnership participants
  - #2 on Top 30 Local Government List
  - #18 on National Top 100 (including local, state, and federal agencies as well as the private sector)

Source: https://www.epa.gov/greenpower/green-power-partnership-top-partner-rankings
Background

Source: Air & Liquid Advisors
Background

- Electricity expenses represent a significant annual budget item
- RECs are internationally recognized as ownership of environmental attributes and credited for providing incentives for renewable energy development
- After 10 years, Dallas should now consider planning for additionality or a more direct role in new renewable energy development to result in both environmental and fiscal benefits
- Clear policy supporting environmental and climate change action plan initiatives should be followed with an energy-focused policy that builds upon past sustainability success
Proposed Dallas Green Energy Policy

- Dallas has had a de-facto energy policy since at least 2008 when the City began offsetting 40% of electricity consumption with RECs
- Consumption offset by RECs increased to 50% in Oct 2015 and to 100% in Jan 2017
- Dallas was ranked #1 in 2017 after the increase to 100% on the U.S. Environmental Protection Agency’s Green Power Partnership Local Government List
Proposed Dallas Green Energy Policy

• City Council resolution 19-0223 launched development of a comprehensive environmental and climate action plan

• Green energy policy supports the action plan by formalizing de-facto energy policy and guiding development of an energy management system and procurement strategy

• Initial green energy policy to be re-evaluated and, as appropriate, updated subject to Council approval as part of the action plan process
Proposed Dallas Green Energy Policy

The draft initial policy reads as follows:

The City of Dallas is committed to clean and efficient energy use and the commitment is embodied by our use of 100% renewable energy for municipal operations. The City of Dallas further recognizes the advantage presented by green energy produced by on- and off-site renewable energy projects. Accordingly, we will seek to sustain and promote renewable energy projects and partnerships that reduce emissions and environmental impacts for the benefit of Dallas residents and the region.
Implementing Policy Through an Energy Management System
Energy Management System

• Systematic approach to being intentional about energy decision

• 3rd party certification not required

• Phased implementation over 3-5 years (establish baselines / targets, benchmark, annual reporting, etc.)

https://www.onthemosway.eu
Implementing Policy Through Procurement
Implementing Policy through Electricity Procurement

• Texas legislature de-regulated the retail electricity market effective January 1, 2002

• Large City volume attracts attention of retail electricity providers (115+ REPs certified by Public Utility Commission of Texas) and brokers (not certified but in business to connect REPs and customers) due to our credit rating and other factors

• State law exempts electricity from normal public procurement requirements (contract execution typically completed within hours based on near real-time market prices)
Implementing Policy through Electricity Procurement

• TFS Energy Solutions, LLC d/b/a Tradition Energy was hired in December 2018 to serve as an independent, third-party energy procurement and management advisor in preparation for our next electricity contract.

• In addition to providing market research, analysis, and procurement support, Tradition is also providing strategic procurement recommendations based on the City’s interest in cost-effective and sustainable energy consistent with the proposed green energy policy.
About Tradition Energy

- Tradition is the nation’s largest and most experienced energy management and procurement advisor to mid- to large-sized companies and government organizations.
- Advising clients in energy commodities markets since 1986.
- Industry-acclaimed as a market research expert and primary source for market intelligence.
- Better informed decisions and additional savings through procurement expertise and unsurpassed experience in the wholesale energy markets.
- 95% of clients say that our “strategic recommendations are making a positive contribution to their enterprise”*.
- Part of the Tradition Group, a top 3 institutional broker of financial products and commodities with over 2,200 employees in 28 countries and revenues of approximately $1.0 Billion.

*Providing local clients with the full resources of a global energy advisor.
Strategic Solutions

- **Market Research & Intelligence**
  - Wholesale energy market access & pricing
  - Primary research reports
  - Regulatory & legislative tracking

- **Strategic Risk Management**
  - Exposure analysis
  - Assess market dynamics
  - Evaluation of strategic options
  - Hedging recommendations

- **Energy Procurement & Supply Management**
  - Electricity, natural gas, and fuels
  - Supplier vetting & management
  - Customized reverse auction RFP’s
  - Commercial terms & credit negotiation
  - Contract management

- **Client Services**
  - Post-contractual service includes account switching, energy rates, tax charges
  - Team responds quickly to account and billing issues

- **Communications**
  - Quarterly contact to review current supply agreements, procurement opportunities and related issues

- **Client Education**
  - Two-day Energy Risk-Management Seminars
  - Energy Price Forecast Seminars & Webinars
  - Monthly product & service webinars

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1. Develop Strategy
2. Implement Plan
3. Client Services
4. Monitor Report Refine

Holistic Process
Government purchasing channel

- Exclusive bi-monthly energy contributor to Government Procurement magazine, the official magazine of the National Institute of Governmental Purchasing (NIGP)

- U.S. Communities, now a subsidiary of OMNIA Partners (Public Sector), the leading national cooperative purchasing program, with over 90,000 members representing education, local and state government and non-profit organizations

- Tradition Energy has won two consecutive U.S. Communities national RFPs to be the exclusive energy consulting and management services advisor to public agencies

- The Omnia/U.S. Communities contract delivers many benefits, including:
  - The best supplier pricing in the market
  - Time and money savings
  - Contract value – even if your organization is NOT required to publicly bid utilities
Experience

- Over 80 billion kWh in energy usage and more than $16.7 billion in energy spend managed
ERCOT – Market Summary

- Reduced reserve margins (in the coming years) have the potential to create severe power price spikes during periods of peak demand.
- Increased natural gas production will be largely offset by increased demands from additional LNG export terminals.
- Lower natural gas prices along with dwindling reserve margins will create a more volatile electricity price environment in 2019.

Source: ERCOT
ERCOT – Reserve Margins

- Reserve margins dropped from 18.9% to 11% in 2018 and are projected to drop to 8.1% in 2019, a level well below ERCOT’s recommended 13.75% margin and are projected to remain below that level through 2023.
- 2018 Summer peak demand was projected to reach a record 72,756 MW, but reached an even higher record peak of 73,259 MW on July 19.
- As shown below, 2019 Summer peak contracts across ERCOT are offered at near $145/MWh, down slightly from their peaks near $150/MWh.

### 2018 YoY Movement

<table>
<thead>
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<th>Term</th>
<th>Price</th>
<th>Change</th>
<th>% Change</th>
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<tbody>
<tr>
<td>Calendar '19</td>
<td>39.30</td>
<td>$11.55</td>
<td>41.62%</td>
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<tr>
<td>Calendar '20</td>
<td>32.35</td>
<td>$4.65</td>
<td>16.79%</td>
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<tr>
<td>Calendar '21</td>
<td>31.85</td>
<td>$3.60</td>
<td>12.74%</td>
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### Calendar ‘19 Market Reaction

*Plant retirements announced*
ERCOT – Renewable Supply

- ERCOT wind generation will increase by more than 11.4 GW or ~45% through 2019.
- ERCOT will add ~1,500 MW of solar generation capacity through 2019.
- By the summer of 2019, wind capacity is projected to exceed coal capacity by more than 10,000 MW.

Source: ERCOT, Tradition Energy
ERCOT – Generation Supply

- The 871 MW J.T. Deely coal-fired power plant retirement has contributed to the low reserve margins this year.
- ERCOT recently authorized the City of Garland to indefinitely mothball its 470 MW Gibbons Creek coal-fired power plant.
- ERCOT senior director of system planning has acknowledged that the loss of the plant will bring the summer reserve margin down from 8.1% to 7.4%, an 18-year low.
- Reserve margins for the next 5 years are expected to be:
  - 7.4% in 2019,
  - 10.7% in 2020,
  - 12.2% in 2021,
  - 9.8% in 2022,
  - and 7.5% in 2023.

All well below the 13.75% safe zone margins deemed by ERCOT.
ERCOT – Supply vs Demand

- In 2019, peak demand in ERCOT is expected to rise by ~2.2% to 74,853 MW
- ~1,300 MW of coal-fired generation is expected to retire before summer 2019
- While ~400 MW of additional natural gas-fired generation is expected to come online before the summer 2019, this development will not resolve the supply vs. demand imbalance currently projected through 2023

**ERCOT Peak Demand vs Reserve Margin**

![Graph showing ERCOT Peak Demand vs Reserve Margin]

*Source: ERCOT, Traditon Energy*
ERCOT – Natural Gas Supply

- According to EIA’s latest update, dry gas production levels in ’19 are expected to average a record 90.2 Bcf/d, up ~7 Bcf/d from 2018.
- Permian production in 2019 will increase by ~1.0-2.0 Bcf/d.
- A record 4,000 drilled but uncompleted wells existed in the Permian basin at the end of 2018.
ERCOT – LNG Demand

- US LNG export demand will increase by 80% to ~9 Bcf/d by the end of 2019.
  - In Q1 2019, Cameron 1 and Elba Island 1-6 are expected to enter service.
  - During Q3 and Q4 of 2019, Cameron 2&3, Corpus Christi 2, Elba Island 7-10, and Freeport 1&2 are projected to begin operation.
ERCOT – Forward Prices

- Since longer term pricing is cheaper than short term pricing, Dallas can capitalize on market conditions and secure a fixed firm rate as long as 15 years.
- Even though 2018 & 2019 popped on the initial announcement of plant retirements (Dec. ‘17), the outer years did not increase to the same effect.
- In October ‘18 we began to see risk premiums baked into prices for these outer years as ERCOT’s forecast for the foreseeable future has not improved.
City of Dallas – Holistic Strategy

- We are currently evaluating several power purchasing scenarios that would entrench the City in a top tier category for renewable efforts alongside the City of Chicago, the City of Houston, etc.

- While conducting our evaluation we are also assessing the most cost efficient means to achieve our objective. The combination of:
  - Renewables (on & offsite solar & wind)
  - Renewable Energy Credits
  - Traditional Power

- During this assessment, options from 12-180 months are being evaluated as part of a long term strategy
On-Site Renewable Options

- A Power Purchase Agreement (PPA) is a financial commitment in which a third-party developer owns, operates, and maintains solar panels. The end user then agrees to host the system on its property and in turn purchases the system’s electric output from the solar provider for a predetermined rate.

- The market is yielding Power Purchase Agreements for $50 or less / MWh (all-in) for on-site platforms if the City can install solar on at least 100,000 sq. ft. of building space.

- We will build in contract language that will allow flexibility for future solar or renewable projects.
On-Site Renewable Options, cont’d

Based upon the direction for the City, Tradition would begin to entertain options from solar developers for a potential RFP.

Tradition can provide the following sustainability advisory services as part of the initial RFP process:

- Review and comment on the financial assumptions for proposed solar projects and/or net metering agreements throughout our relationship, apart from legal and engineering advice.
- Should the City elect to work on a sustainability project, beyond the initial RFP process, either through Tradition’s network or an external network which requires Tradition’s assistance, Tradition will outline a fee structure and services agreement provided at that time.
Tradition Energy Procurement Process for City of Dallas

1. Pre-Qualify Suppliers
2. RFQ to Suppliers
3. Supplier Responses / Tradition Feedback
4. Negotiate Contract Terms
5. Pricing Report to Client
6. Wholesale Market/Refine Pricing
7. Sign Contract
Reverse-Auction Pricing Process

Tradition Energy Pricing System - TEPS

- A innovative online supplier pricing system developed in house

- Client benefits:
  - Increased speed of supplier responses
  - More supplier competition improves prices
  - Leverages Tradition’s influence with suppliers for our client’s benefit

Pricing requirements posted to TEPS – Energy
Suppliers notified of competition

Suppliers submit multiple bids to TEPS

Winning Bid
Indicative Market Rates

Preliminary Indicative Price (per MWh) Ranges

Rates decrease by as much as 14% with longer terms

* Single proposal thus far for 15-year term
Value Added Offerings

- TXU contracts since 2010 provided approx. $3.25m for electricity-related projects
- Examples include LED lighting upgrades of the 9-1-1 Call Center and above-ground floors of City Hall
- REPs are also proposing similar offerings (amounts to be determined) intended to be used for renewable energy-focused projects or programs
In Summary

• City of Dallas electricity expenses (de-regulated commodity plus regulated transmission and distribution charges) were $54.2m in FY18
• 2010 contract included renewable energy credits (RECs) for 40% of the City’s consumption
• Current contract expires May 31\textsuperscript{st} and includes RECs to offset 100% of our electricity consumption
• City of Dallas ranks #2 on the U.S. Environmental Protection Agency’s Green Power Partnership Top 30 Local Government List and ranks #18 on the Green Power Partnership National Top 100 (including local, state, and federal agencies as well as the private sector)
In Summary

• City staff drafted a Dallas Green Energy Policy that builds upon our current de-facto energy policy to ensure forward momentum, connects with our climate change efforts, and sets stage for community programs.

• Independent third-party hired to provide market intelligence and analysis and to assist in procuring a new electricity contract consistent with the energy policy.

• Dynamic nature of de-regulated electricity market and state law exemption from bidding support greater flexibility in procurement process (contract execution typically completed within hours based on near real-time market prices).

• Indicative pricing suggests rate reductions of as much as 14% (approx. $7.4m annually) based on the length of contract.
Next Steps

April 10th Council Agenda item

1) Adoption of Green Energy Policy (pending Quality of Life feedback on April 8)
2) Authorize final negotiation and electricity agreement execution

Mid to late April

Tradition Energy, City staff including City Attorney’s Office schedule final tenders and contract execution

May – June 1st

Council updated on details of executed contract, accounts transitioned, new contract in place June 1st
Energy Policy, Strategy, and Electricity Procurement

Government Performance and Financial Management Committee
April 1, 2019

Errick Thompson, Director
Building Services Department

Michael Ayala, CEC
Executive Director
Tradition Energy

City of Dallas
## Appendix – Fixed vs Pass-Through Costs

### Fixed Costs

- ERCOT Cost (included in Contract Price)
  - Wholesale price of energy
  - Capacity/Demand Charges
  - PUCT Credit Requirements
  - REP Administration and Margin Fees
  - TDSP line losses
  - Unaccounted for Energy (UFE)

- Regulation Service (Reg Up, Reg Down)
- Responsive Reserve Service
- Non-Spinning Reserve Service
- Reliability Unit Commitment (RUC) for non-LMP contracts
- Real Time Revenue Neutrality Adjustment (RTRNA)
- Renewable Energy Surcharge (REC)
- Trade Hub to Load Zone Basis (Interzonal Congestion)
- Reliability Must Run (RMR) Reserve Service
- Black Start Service
- Voltage Support Service
- Charge for Emergency Power Increase
- Emergency Response Services (ERS)
- ERCOT System Administration Fee
- ERCOT ISO Fee
- ERCOT Reliability Charge
- Other ERCOT Charges
- Monthly CRR Settlement

### Regulated Costs - Oncor

- Pass-through Charges (passed through at cost)
  - TDSP Charges - regulated by Public Utility Commission of Texas and imposed by the TDSP(s)
  - Customer Charges
  - Metering Charges
  - Transmission & Distribution Charges
  - System Benefit Fund Charges
  - Nuclear Decommissioning Charges
  - Competitive Transition Charges
  - Transition Charges
  - Excess Mitigation Credits

- Utility-imposed Reactive Power Charges
- Charges for services, repairs, and equipment
- Other TDSP charges
- Municipal Franchise Fees
- Advanced Metering Charge
- Gross Receipts Tax (if applicable)
- Sales Tax
- Public Utility Assessment (PUCA)
Appendix – Previous Electricity Procurement

• City joined the Texas Conference of Urban Counties Aggregation Project (TCAP - later the “Public Power Pool”) that negotiated rates on the City’s behalf (as part of membership fee) 2002 - 2007

• City issued RFP and awarded 11 month (Feb – Dec 2007) contract for streetlight electricity in 2007 to the Texas General Land Office

• City issued RFP and awarded Contract to Suez Energy in 2008

• City issued RFP and awarded contract to TXU in 2010
  • “blended and extended” TXU contract in 2012 (5% rate reduction)
  • “blended and extended” again in 2016 (3.2% rate reduction Oct 2015 – May 2016 and additional 17.2% reduction June 2016 – May 2019)
Incorporates base load only, not accounting for the most expensive portion of the City’s load.

Marketed price only accounts for energy cost, not ancillaries. This could account for an additional cost of $3.00 - $5.00 / MWh.

The City would need a more expensive bridge contract between 2019 and the start of the Power Pool contract.

Customer won’t be able to lock in their actual rate until the aggregator works with each supplier to determine percentage of load that can be hedged. Once that is determined, this solution will have to align with existing supply contracts.

- What if current supplier does not want to incorporate terms/conditions of Power Pool?
Appendix – Illustration – Elm Fork Water Treatment Plant

For illustrative purposes only:

- ~ 69,000 MWh annual consumption
- 14 acre solar project yields ~ 3.5 MW or roughly 30,660 MWh

- Power plants are typically described in terms of peak or instantaneous output (in Mega- or Giga-watts)
- 1 MW solar farm is ~4 to 6 acres depending on the technology used
WHEREAS, the City of Dallas is committed to energy efficiency and being a good steward of resources in the procurement of energy for municipal operations; and

WHEREAS, the City of Dallas is similarly committed to protecting its residents by reducing emissions, improving regional air quality, and addressing the real consequences of climate change; and

WHEREAS, the City of Dallas achieved a 68% reduction of municipal greenhouse gas (GHG) emissions from 1990 levels by 2017, exceeding a strategic goal of 39% reduction; and

WHEREAS, the municipal emissions reductions were achieved in large part through the procurement of renewable energy, municipal energy efficiency retrofit projects, and on-site renewable energy projects such as landfill gas capture at McCommas Bluff Landfill and co-generation of electricity at Southside Wastewater Treatment Plant; and

WHEREAS, the City of Dallas is the most populous municipality in the United States to use 100% renewable energy according to the U.S. Environmental Protection Agency Green Power Partnership Top 30 Local Government list dated February 5, 2019; and

WHEREAS, the City of Dallas currently achieves its 100% renewable energy usage in part through the purchase of renewable energy credits (RECs); and

WHEREAS, the City of Dallas desires to expand renewable energy use and generation through on- and off-site options; and

WHEREAS, solar or wind energy sources accounted for approximately 18% of the energy generated in Texas last year, and Texas led the nation in wind energy generation and was sixth in solar energy generation; and

WHEREAS, on June 15, 2016, City Council adopted a resolution encouraging the State of Texas to explore changes that would promote “net metering” and the creation of distributed energy districts or additional programs to expand the use of solar power and other renewable green energy sources by Resolution No. 16-0974; and

WHEREAS, on January 23, 2019, City Council adopted a resolution calling for federal action on climate change and continued local efforts to develop a comprehensive environmental and climate action plan with goals that will ensure that the City of Dallas is addressing climate change in a manner that is effective and equitable by Resolution No 19-0223; and
WHEREAS, the City of Dallas' comprehensive environmental and climate action plan will chart the path forward towards additional emissions reduction goals that will help ensure that we improve the environment and avoid the most severe impacts of climate change; and

WHEREAS, by adopting a green energy policy through this resolution, the City of Dallas will ensure that emissions reductions achievements to date will continue; and

WHEREAS, the energy policy should be re-evaluated and, as appropriate, updated subject to Dallas City Council approval as part of the comprehensive environmental and climate action plan process and other actions hereby resolved; and

WHEREAS, Texas Government Code Section 252.022 (a)(15), exempts electricity purchases from the standard purchasing procedures; and

WHEREAS, due to the nature of the energy market, an electricity procurement process with greater flexibility is necessary that authorizes the City Manager to negotiate the final process and enter into an electricity services contract; and

WHEREAS, on December 13, 2018, Administrative Action No. 19-5149 authorized the City of Dallas to enter into a consulting contract with TFS Energy Solutions, LLC d/b/a Tradition Energy to provide energy procurement and management advisory services.

Now, Therefore,

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF DALLAS:

SECTION 1. That the City of Dallas Green Energy Policy shall read as follows: The City of Dallas is committed to clean and efficient energy use and the commitment is embodied by our use of 100 percent renewable energy for municipal operations. The City of Dallas further recognizes the advantage presented by green energy produced by on- and off-site renewable energy projects. Accordingly, we will seek to sustain and promote renewable energy projects and partnerships that reduce emissions and environmental impacts for the benefit of Dallas residents and the region.

SECTION 2. That the City Manager is hereby authorized to determine the most advantageous proposal and enter into an electricity services contract, approved as to form by the City Attorney, consistent with the adopted City of Dallas Green Energy Policy and the direction presented in Section 1.
SECTION 3. That the City Manager (1) examine the feasibility of on- and off-site renewable energy projects at City and other properties; (2) establish a citywide energy management system to include continued benchmarking of municipal energy efficiency efforts and identification of areas for improvement to ensure Dallas remains an energy leader; and (3) continue to explore options to expand the use of renewable energy beyond municipal operations in the Dallas community.

SECTION 4. That this electricity service contract will be designated as Contract No. BSD-2019-00009705.

SECTION 5. That this resolution shall take effect immediately from and after its passage in accordance with the provisions of the Charter of the City of Dallas, and it is accordingly so resolved.