



City Council Report

Date: 4/19/2018
To: City Council
Through: Kari Kent, Assistant City Manager
From: Frank McRae, Energy Resources Department Director
Pedro Serrano, Energy Resources Program Manager
Anthony Cadorin, Energy Resources Coordinator
Subject: Electric Supply Agreements: Approval of Agreements and Associated Letters of Confirmation for up to four (4) Years of Supply of Electric Power and Energy - Council Districts 1 & 4

Purpose and Recommendation

The Energy Resources Department recommends that the City Council authorize the City Manager or his designee to enter an agreement with a term of up to four (4) years ("Supply Period") for the purchase of electric power and energy with any one or more of the following suppliers: Shell Energy North America (US), L.P. (SENA); Exelon Generation Company, LLC (Constellation); the Salt River Project Agricultural Improvement and Power District (SRP); CitiGroup Energy Inc. (Citi); BP Energy Company (BP), and Arizona Electric Power Cooperative (AEPCO). The contract will be in the form of an Edison Electric Institute Master Power Purchase and Sales Agreement (EEI) or a similar agreement with associated Letter(s) of Confirmation (Confirmation) documenting the quantities and pricing (collectively, the "Agreement").

Background

The City of Mesa (Mesa) operates an electric service area (ESA) of approximately 5.5 square miles encompassing the heart of the city, including the original town-site. As of April 2018, electric service is provided to approximately 16,600 customers of whom 13,800 are residential and 2,800 are commercial, interdepartmental or another public authority. The City itself is the largest customer within the ESA (based on the combined use of all Mesa's facilities in the ESA). Summer peak demand in 2017 for the electric utility was 87 Megawatts (MW).

Mesa's current electric power supply portfolio consists of the following electric generation and purchased power supplies:

- Western Area Power Administration ("Western")
 - Parker-Davis Project (Hydroelectric): 10.4 MW (Summer); Expires September 2028
 - Colorado River Storage Project (Hydroelectric): 4.3 MW (Summer); Expires September 2024
- SENA
 - Agreement Number 1:
 - Part 1A: 10 MW, Expires December 2018 (Sculpted Base Supply)
 - Part 1B: 15 MW, Expires September 2020 (Summer Peak Supply)
- Constellation
 - **Base Supply: 15 MW, Expires September 2018**
 - July-August Peak Supply: 10 MW, Expires August 2020
 - Dispatchable Peak: 10 MW, Expires October 2018

This portfolio met approximately 93% of Mesa's customers' annual energy requirements thru the twelve months ending December 2017. The remainder of the customers' requirements can vary significantly due to weather fluctuations and are met by real-time purchases from the regional wholesale markets on an *ad hoc* basis. Western acquires these additional resources on behalf of Mesa (and other similarly situated publicly-owned utilities on an aggregate basis) through its Resources Management Services (RMS) program, allowing Mesa to take advantage of economies of scale that would not otherwise be available.

The final signed Agreement resulting from this RFP will essentially replace the Constellation Base Supply contract that expires in September 2018 (identified in **bold** above). It is anticipated that the proposed Agreement will provide approximately 37% of our customers' annual energy requirements in the near term.

Discussion

On March 26, 2018, Mesa distributed an Electric Power Request for Proposals 2018-04 (RFP) to over 60 energy suppliers who actively trade energy at Mesa's supply points. The RFP was also sent to other entities who have expressed an interest in contracting to meet our energy supply needs, such as owners and developers of solar generation facilities. The RFP solicited proposals to replace the expiring Constellation Base Supply. This Base Supply contract meets approximately 38% of our customers' annual energy supplies and comprises approximately 33% of our annual energy supply costs. The RFP requested the terms listed in Table 1 and associated pricing.

Table 1) Requested RFP Terms

RFP Term	Term Beginning	Term Ending
18 month term	10/1/2018	3/31/2020
30 month term		3/31/2021
42 month term		3/31/2022
42 month term with two options, 1 year renewals		3/31/2024

The RFP was issued on March 26, 2018 and responses were due on April 11, 2018, legally satisfying the City's requirement of having RFP's open for a minimum of 14 days. Mesa received timely, responsive, and complete proposals from SENA, Constellation, Citi, BP Energy, SRP and AEPCO. Some of the unit prices in the responses to the RFP (Indicative Prices) came in below the prior contract price, and below the forecast 2018 through 2021 budgeted contract prices. The responses to the RFP also provide fixed pricing over the term of the contracts as requested.

The final contract selection will be based upon best and final offers for the Supply Period taking into consideration Mesa's available transmission access, in accordance with the Council authorization set forth in the proposed Resolution accompanying this Report. This process has been successfully utilized for previous RFPs.

Alternatives

An alternative to procuring these supplies would be to rely upon Western to purchase these energy supplies on a short-term basis through daily and monthly transactions on the wholesale electricity market. The volatility of the electric supply market causes this alternative to be unacceptably risky due to the potential for both limited power supply availability and price spikes when supply constraints are experienced (such as during critical summer demand periods). Another alternative is to not to utilize any of the proposals from this RFP and issue another RFP to solicit alternative proposals. Given the favorable Indicative Pricing, this alternative is also not recommended.

This RFP sought a resource profile that is "on" 24 hours a day at a constant hourly level (15 MW of output all 24 hours) and at a constant level in each month (15 MW of output all 12 months of the year). This constitutes the City's firm baseload supply – the demand for this energy is constant throughout the day, night, and year. It is therefore beneficial for Mesa for this supply and the associated pricing to be procured on a firm basis, to provide stability for our customers.

However, Mesa has performed extensive analysis, and been involved in numerous conversations regarding the integration of more renewable resources into its energy supply portfolio. Mesa included the following language to let suppliers know that renewable resources would be considered for this RFP:

"Mesa will consider proposals to meet its needs from any entity which currently

owns, or proposes to develop, traditional generation facilities and/or generation facilities utilizing renewable resources, i.e., solar thermal, biomass, geothermal, wind power or energy storage. These resources may be evaluated by Mesa as a substitute or as a separate alternative to the resources described above.”

The RFP was sent to at least five entities who are known to deal specifically with this type of energy. Generally, in the southwest these renewable energy projects are specifically developed by utilities to serve their own native load and renewable portfolio requirements, so these resources are rarely specifically traded on the wholesale energy market.

Wind and solar energy are intermittent supply options and are not capable of providing the energy across every hour of every month unless some form of energy storage is integrated with the wind and solar resources. Battery storage is rapidly becoming an option for smoothing out the variability of those resources and Mesa estimates that to meet the requirements of a 15 MW 7x24 base load type resource (131,400 MWh per year), a supplier would need to develop 101 MW of single axis tracking solar with 220 MWh of storage.

Market data indicates that unit contingent (i.e. non-firm) solar without storage could be contracted for in a price range that is comparable with the bids to this RFP (\$25 - \$35/MWh) but as stated above would not meet the requirements to be firm, and supply power across every hour and month. The addition of storage could supplement wind or solar resources to meet the continuous, firm, base load requirement, but would increase prices upwards by an additional \$12 - \$40/MWh based on recent market information. The cost increase due to adding storage would total an extra \$1.6 - \$5.3 million per year for what would still ultimately be a non-firm supply, and that Mesa’s electric customers would be responsible for repaying. Also of note, based on our research this would constitute one of the largest battery storage projects in the world.

Mesa has additional contracts expiring in the 2018 to 2020 timeframe that are much better candidates for integrating renewable resources into our portfolio while minimizing the impacts on our energy supply costs. An alternative, and likely the most cost-effective option for providing renewable resources would be to competitively bid and purchase “unbundled” Renewable Energy Certificates (or RECs).

Fiscal Impact

The costs resulting from the proposed Agreement are recovered from electric utility customers through an energy cost adjustment mechanism which is revised as frequently as monthly (“EECAF”). The EECAF decreases when supply costs decline and increases when supply costs increase. Based on the Indicative Pricing offers received, it is anticipated that the EECAF rate will be reduced compared to recent levels, reflecting lower total costs for ERD’s electric energy supplies. Based on the

Indicative Pricing, the annual reductions could be between \$ 390,000 to \$ 86,000 depending on whether a 1.5 year, 2.5 year or 3.5 year term is selected. Final offers from the suppliers will determine the final savings to our customers. Prices can vary significantly between indicative offers and refreshed, final pricing depending on the movement of the wholesale energy market. For this reason, staff is requesting the Council approve the Resolution authorizing the purchase of the electric supplies at this Special Council meeting.

Coordinated With

The development and administration of the RFP was coordinated with the City Attorney's Office and the Purchasing Department. The City Attorney's Office has reviewed, as to form, and will assist with negotiation of any final Agreement used to complete any electric power supply transactions pursuant to Council authorization.