



City Council Report

Date: 12/12/2016
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 for Scheduling Services, Peak Reliability Charges, and Balancing Authority - Council District #1 & 4

Strategic Initiatives



Purpose and Recommendation

The Energy Resources Department recommends that the City Council authorize the City Manager or his designee to enter into the agreements described below with the Western Area Power Administration (Western):

Agreement to Continue Participation in Western Resource Management Services Group ("RMS Agreement"):

The Energy Resources Department recommends entering Amendment No. 6 to Contract No. 97-DSR-10820 with Western for Mesa to remain in the Resource Management Services group whereby Western will provide scheduling, purchasing, selling, and balancing services, and otherwise manage energy resources on the group's behalf.

Western Operation of Metered Subsystem Connections and Balancing Authority and Balancing Authority and Ancillary Services Agreement ("BA Agreement")

The Energy Resources Department recommends entering this agreement for balancing authority services from Western. This agreement provides the terms under which Western and Mesa operate and balance their separate but interconnected electrical systems and the tariffs attributed to those operations.

Peak Reliability Agreement Administered by Western ("Peak Agreement"):

The Energy Resources Department recommends entering this agreement for an eight (8) year term for Mesa's annual share of costs for area-wide reliability coordination.

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 November, 2016, electric service is provided to approximately 16,400 customers of whom 13,600 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 2016 for the electric utility was 85 Megawatts (MW).

The ESA is interconnected to the bulk transmission grid via a single 230kV-69kV substation that is owned by Mesa and SRP ("Rogers Substation"). In terms of its location within the bulk transmission grid, Rogers Substation is located inside Western's Western Area Lower Colorado balancing authority (WALC), meaning that Western operates and balances power on the transmission grid from which Mesa takes power. The BA Agreement sets forth the tariffs and rates that apply to the services that Mesa must procure as a condition of the use of Western's transmission system (the actual charges for transmission service is administered through other contracts with Western). Similarly, the Peak Agreement provides for Mesa's payment of its annual share of costs for area-wide reliability coordination (another condition of the use of Western's transmission system).

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

- Western
 - Parker-Davis Project (Hydroelectric): 10.4 MW (Summer); Expires September 2028
 - Colorado River Storage Project (Hydroelectric): 4.3 MW (Summer); Expires September 2024
- Shell Energy North America:
 - Agreement Number 1:
 - Part 1A: 10 MW, Expires December 2018 (Sculpted Base Supply)
 - Part 1B: 15 MW, Expires September 2020 (Summer Peak Supply)
- Exelon Corporation:
 - Base Supply: 15 MW, Expires March 2017
 - July-August Peak Supply: 10 MW, Expires August 2020
 - Dispatchable Peak: 10 MW, Expires October 2018

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.

Mesa joined RMS in 1997 along with Electrical District #2 (ED2) and Wellton-Mohawk Irrigation and Drainage District. Currently, RMS consists of Mesa, ED2, the Town of

Fredonia, Aha Macav Power Service, and Cortaro Marana Irrigation District. The 1997 RMS Agreement was signed with a term of 20 years and will expire in December of 2017. The other current RMS entities have agreed upon another 20-year extension which amends the original RMS Agreement, however, this new RMS Agreement contains the ability for Mesa to leave RMS by providing notice within 24 months of a 3-year commitment period cycle.

Discussion

RMS Agreement:

Mesa's current RMS Agreement is expiring in December 2017. RMS provides services which Mesa requires in order to operate its electric utility in the bulk electric grid. These services include:

- Wholesale energy purchases: Through RMS, Western purchases energy to meet the electric utility's load on a real-time basis. Mesa has contracted for close to 90% of its electric power supplies in any given month using long-term energy supply contracts, however, electric load is highly sensitive to weather and so the "gap" between the load and Mesa's contractual supplies must be covered by purchases on the wholesale energy market. These purchases are made by Western's real-time energy trading desk on an hourly and day-ahead basis. Western's real-time energy trading desk is staffed 24 hours a day in order to ensure that the RMS entities' energy supplies are covered around the clock.
- Wholesale energy sales: Through RMS, Western sells Mesa's excess energy (contractual energy that Mesa has purchased in excess of its actual electric load) on the wholesale energy market. Similarly, this is done via Western's 24-hour trading desk. As explained above, Mesa's strategy for long-term purchases of energy is to procure slightly below its full energy requirements, however, due to the variability in electric load, energy sales do sometimes occur.
- Provide economies of scale for energy purchases: As explained above, RMS manages a critical portion of Mesa's energy portfolio, however, this portion is still small in comparison with the typical energy purchases on the wholesale energy market. Through RMS, Mesa is able to combine these loads with the other RMS entities in order to purchase larger energy supplies on the market at a favorable price for all of the entities.
- Management of hydropower energy supplies: Through RMS, Western optimizes Mesa's hydropower supplies. The output of a hydro-electric generator can be ramped up and down to respond to electric load. Because purchasing energy from the wholesale energy market is expensive during peak hours (for example, in the afternoon in the summer), Western schedules the full use of Mesa's hydropower resources in those expensive peak hours and minimizes the use of hydropower resources in the inexpensive off peak hours. This optimization of the hydropower resources significantly reduces Mesa's overall cost of power by reducing expensive on-peak power purchases.
- Management of Mesa's dispatchable energy supplies: Mesa currently has a contract with Exelon that can be used by providing Exelon with a day of notice.

Through RMS, Western coordinates with Exelon to dispatch this supply whenever market conditions are favorable.

- Resource analysis: Through RMS, Western provides analysis that assist Mesa in making decisions on how to best purchase energy resources and how to optimize its existing resource portfolio.

These services are provided by Western for a rate that is significantly less expensive than other options that Mesa has explored. The total cost for these services through RMS in Fiscal Year 2015-2016 was \$106,760, or 0.77% of Mesa's total power portfolio cost. These costs are driven by Western's staffing needs to provide these services and therefore are predicted to remain relatively constant *ceteris paribus*. Energy purchased by Western on Mesa's behalf through RMS has averaged approximately \$1 million over the past three fiscal years which has varied based on the conditions of the wholesale energy market and Mesa's electric demand. These costs are projected to continue as Mesa's portfolio.

Alternatively, Mesa could self-provide some of the services that are provided by RMS, however, this would require a commitment to a 24-hour electric trading desk, the space to do so, 24-hour staff at the desk, associated training, software, and federal licensing. Mesa has also reached out to private companies who handle these services for other entities in Arizona, however, the prices quoted by these entities would result in a cost increase of this service of one full order of magnitude.

Mesa will continue to explore alternatives and if a lower-cost alternative is determined, Mesa will seek council approval prior to pursuing that alternative. Early termination of the RMS Agreement will result in penalties to the City of Mesa, levied by Western.

BA Agreement and Peak Agreement:

The terms of the BA Agreement were previously incorporated into the 1997 RMS Agreement, however, due to structural and various regulatory changes in the electric industry, these must be separated into two separate agreements. Therefore, Mesa is already paying those costs associated with the BA Agreement. Similarly, Mesa has already been paying the charges for the Peak Agreement as they are a necessity of using Western's transmission system, however, there was no prior Peak Agreement. The charges in both agreements vary based on Mesa's peak electric load as it relates to Western's overall transmission system load and Western's costs. Over the past 5 fiscal years the combination of these charges hasn't exceeded \$30,000 annually. There are no alternatives to these two agreements as they are necessary for operating the electric utility and using Western's transmission system.

Fiscal Impact

The costs resulting from these proposed Agreements are recovered from electric utility customers through an energy cost adjustment mechanism which is adjusted as frequently as monthly ("EECAF"). This rate decreases when supply costs decline and increases when supply costs increase. Final costs will vary based on the factors described above.

Coordinated With

The City Attorney's Office has reviewed, as to form, and will assist with negotiation of the final forms of the agreements pursuant to Council authorization.