



City Council Report

Date: November 5, 2018
To: City Council
Through: Karolyn Kent, Assistant City Manager
From: Frank McRae, Energy Resources Department Director
Pedro Serrano, Energy Resources Program Manager
Anthony Cadorin, Energy Resources Coordinator
Subject: Hydroelectric Supply Renewal Agreement (Districts 1 and 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 thirty- three (“33”) years (“Supply Period”) beginning in 2024 for the purchase of electric power and energy through the Western Area Power Administration (“Western”) from the Colorado River Storage Project and Salt Lake City Area Integrated Projects (“CRSP”). The contract will be in the form of a Firm Electric Service agreement with associated supporting exhibits and agreements.

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 September 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 2018 for the electric utility was 88.3 Megawatts (“MW”).

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

SUPPLIER	SUPPLY NAME	CAPACITY	MONTHS	EXPIRES
WESTERN	Parker Davis Project	10.4 MW	Year-round	Sep. 2028
WESTERN	CRSP	4.3 MW	Year-round	Sep. 2024
SHELL	Sculpted Base	10 MW	Year-round	Dec. 2018
SHELL	Summer Peak	15 MW	May – Sept.	Sep. 2020
CONSTELLATION	July-August Peak	10 MW	July – Aug.	Aug. 2020
CONSTELLATION	Dispatchable Peak	10 MW	June – Oct.	Oct. 2018
CITIGROUP	Base	15 MW	Year-round	Apr. 2020

Discussion

CRSP is the combination of Glen Canyon Dam, Navajo Dam, Flaming Gorge Dam and the system of dams along the Gunnison River (Blue Mesa, Crystal and Morrow Point dams). The Glen Canyon Dam is by far the largest contributor of power to the CRSP (accounting for almost 75% of the generating capacity). CRSP was put into service in the mid-1960's.

The City of Mesa has been a recipient of federal hydroelectric power from the Colorado River since the Mesa Substation was placed into service in 1951 to receive power from the Parker-Davis Project dams (Parker and Davis Dams which retain Lake Havasu and Lake Mojave, respectively, and which were completed in 1938 and 1951, respectively).

Mesa's current CRSP contract was signed with Western in 1988 and began delivering power in October of 1989. Mesa's initial allocation of CRSP power was for 4.637 MW of summer capacity and Mesa received this allocation beginning in October of 1989 through the end of September 2004. This allocation was reduced to 4.478 MW beginning in December of 1989 because of a finding pursuant to an Environmental Impact Statement and further reduced to 4.312 MW when, in the late 1990's, Western determined that native American tribes should receive CRSP power. At that time Western amended CRSP contracts to reduce all allocations by 7% to create a pool of power for new applicants. This reduction in capacity was put into effect in October of 2004 with the start of the renewal of all CRSP contracts. Mesa's current contract for 4.312 MW, which began delivering power in October 2004, expires 9/30/2024 and accounts for approximately 4.2% of the electric utility's annual energy requirements.

Western has issued new contracts to renew and extend CRSP capacity to existing customers and so Mesa is seeking authorization to extend its CRSP allocation through September of 2057, a 33-year term. Power from CRSP is delivered to Pinnacle Peak substation via Western's transmission system and Mesa's rights to this transmission capacity would also be extended through the renewal process.

Mesa's hydroelectric resources are extremely valuable for two reasons. The first reason is that hydroelectric resources can be "sculpted" hourly around all of Mesa's other resources to meet the utility's power demands in the most economical yet reliable manner. The second trait that makes hydropower resources valuable is their very low cost. The average cost of CRSP power over the past 5 years has been \$29.30/MWh on a total cost basis. To date, no other resources available to Mesa have been this inexpensive; Mesa's Summer Peak contract, which could be considered somewhat comparable to the CRSP resource, is priced at \$32.10/MWh.

The rate that Mesa (and all other CRSP customers) pays to Western is the direct cost of operating the dams and transmission system required to generate and deliver the power to Mesa. This keeps rates stable and controlled because Mesa has the ability to provide feedback directly to Western regarding Western's use of funding.

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).

Mesa has been involved in extensive conversations regarding the integration of more renewable resources into its energy supply portfolio. Other, variable, renewable resources would not be viable alternatives to Mesa's CRSP allocation. Mesa's CRSP allocation is one of the major pieces that allows Mesa to consider the purchase of variable, renewable resources, because CRSP's flexibility allows Mesa to sculpt its hydroelectric resources around those variable resources.

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. Because CRSP power prices are stable, it's anticipated that extending the CRSP supply will not cause any significant change in customers' bills. If the contract is not extended, Mesa anticipates that power supply costs will increase which will then increase customers' bills.

Coordinated With

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

Appendix 1: Hydrology

Because Glen Canyon dam and Lake Powell are a large, variable-storage, reservoir type dam system (as opposed to a “run of the river” dam which does not change its storage level, but instead flows through water as it comes into the reservoir), power output from CRSP is subject to hydrology. During times of drought, CRSP allocations can be reduced and during times of water surplus, CRSP allocations can be increased. In the past six years, Mesa’s CRSP allocation has never been reduced, and has been increased only once, in May 2017.

Lake Powell has shown a general trend of decreasing elevation since a historic high in August 1983, however, it has shown a trend of increasing elevation since March 2005. Large questions remain as to the future of how the drought will impact Lake Powell, and its operation strategy has been called into question with initiatives to “fill Mead first” (referring to the idea of keeping Lake Powell low while filling Lake Mead, downstream, to reduce losses to leakage). Regardless of the hydrology and decisions made on operational strategies, every kWh delivered from CRSP to Mesa is a low cost, renewable, flexible unit of energy whose value can be maximized to reduce Mesa’s overall electric supply portfolio cost.

