



City Council Report

Date: November 4, 2019
To: City Council
Through: Kari Kent, Deputy City Manager
From: Frank McRae, Energy Resources Department Director
Anthony Cadorin, Energy Resources Program Manager
Subject: Integrated Resource Plan for the Fulfillment of the Requirements of the Western Area Power Administration's Hydro-Electric Generation Contracts (Council District #1 & 4)

Purpose and Recommendation

The Council is requested to approve the Integrated Resource Plan proposed by the Energy Resources Department which covers the electric power and energy resource demands of the City's local distribution utility system through the year 2028. The IRP was approved by the Sustainability and Transportation Committee for Council consideration on September 23, 2019.

Background / Discussion

The City of Mesa Energy Resources Department (ERD) has developed an Integrated Resource Plan (IRP) which is a planning process which assesses and compares alternatives to the electric power and energy resource needs for the provision of adequate and reliable service to the City's electric utility customers through the year 2028. The IRP will facilitate ERD's continued provision of safe, reliable and economical electric resources to its customers, by establishing a systematic approach for evaluating and planning the acquisition of electric power and energy resources to meet both current and future customer loads and demand side management programs. Given that ERD's supply contracts are staged to expire in a cascading manner throughout the IRP's timeframe, this IRP will help identify the resource or combination of resources that will best replace those contracts while considering diversity, reliability, dispatchability, and other risk factors.

The Council's approval of this IRP will also permit ERD to comply with an important requirement of the long-term hydro-electric power supply agreements with the Western Area Power Administration (Western). In accordance with the Energy Policy Act of 1992, these contracts with Western, which provide ERD with its lowest cost power supply, which is also renewable, require either a new resource plan or an updated resources' plan approximately every five years as well as yearly reports. Upon approval by the City Council, ERD would submit the IRP to Western as its updated Integrated Electric Resource Plan.

The IRP was developed in the following steps:

- Step 1. Forecast system peak demand and associated energy requirements across the IRP's planning horizon;
- Step 2. Forecast the utility system's incremental resource requirements (due to system demand changes including growth and the expiration of existing resources);
- Step 3. Identify and assess the technical and economic feasibility of demand side management (DSM) and supply-side resource options to meet the system's incremental resource requirements;
- Step 4. Develop and apply resource screening criteria to identify a "short-list" of DSM and supply-side resources for further evaluation and consideration;
- Step 5. Refine these resources into potential supply portfolio scenarios;
- Step 6. Seek customer input as to the desirability of each scenario;
- Step 7. Reassess portfolios considering customer input to refine the details of each scenario, develop action plan;
- Step 8. Seek additional customer input on refined scenarios and proposed action plan;
- Step 9. Seek City Management input on proposed IRP and action plan, refine IRP and action plan as necessary;
- Step 10. Seek City Council approval of IRP and action plan.

To seek customer input (Steps 6 and 8), ERD hosted two community meetings, the first in August 2018 and again in September 2018. ERD solicited input and feedback from customers and discussed the IRP steps indicated above at these meetings. Additionally, ERD ran two online surveys to solicit further input from customers.

In order to compare supply-side options (including both renewable and conventional options), ERD issued competitive Requests for Proposals (RFPs). Pricing from responses to the RFPs was used to compare the costs of using renewable resources against the costs of using conventional resources. These costs were then weighed against DSM options and the results presented at community meetings, to City Management and to the City of Mesa's Sustainability and Transportation (SAT) Committee. Input from customers indicated that although they have a strong desire for renewable resources, they are also very sensitive to rate increases that could result from the integration of such resources.

The IRP includes an action plan that will guide ERD's resource acquisition decisions through 2023. The action plan includes descriptions for each DSM Program and information currently available about the prospective supply-side resources to be acquired within that time period.

The DSM component of the IRP includes separate programs for residential and commercial customers. These DSM programs focus on:

1. Creating rate structures to encourage the shifting of energy use to off-peak hours in order to reduce peak demand while also avoiding widespread utility revenue loss and cross-customer-class subsidization. This includes:
 - a. Voluntary residential Time-of-Use rates;
 - b. Voluntary commercial Time-of-Use rates;
 - c. Voluntary Electric Vehicle Charging rates; and
 - d. Voluntary residential prepay rates.
2. Encouraging programs that will benefit ERD's non-owner-occupied homes and low-income residents:
 - a. Multi-family Energy Efficiency Program; and
 - b. Voluntary residential prepay rates (mentioned above as well).
3. Encourage programs that provide ancillary/societal benefits:
 - a. Municipal Electric Vehicle Program – Reducing Mesa's fleet fuel purchases;
 - b. Shade Tree Partnership – Encouraging outreach and cooperation with SRP; and
 - c. Municipal Energy Efficiency Program – Reducing peak load at City buildings to reduce the City's operating costs while still being sensitive to ERD's revenue requirements.

In addition to these DSM programs, ERD will be continuing the previously Council-approved, customer-owned Photovoltaic (PV) Program whereby eligible customers may be eligible for an up-front incentive and/or net metering.

Assuming the historic reductions in cost of renewable resources continue, ERD envisions that competitive RFPs and joint action with other utilities and governmental entities will facilitate procurement of significant amounts of renewable energy with the possibility of modest negative effects on customer bills relative to conventional resources, and may even reduce customers' bills in the short term. If some of the opportunities arise as foreseen through the IRP, ERD envisions being able to supply just over one-third of customer energy requirements with renewable resources by 2023 (inclusive of hydroelectric resources) while still maintaining rate competitiveness with surrounding utilities.

Additionally, ERD will seek, through competitive solicitations, to develop economic sources of (renewable and natural gas) internal generation within its service territory. This internal generation may help increase system reliability in times of widescale utility outages and help integrate additional renewable resources into ERD's portfolio by providing flexible generating capacity.

Alternatives

As previously discussed, ERD is required to develop and file an IRP as part of its contractual obligations under its low-cost hydro-electric power supply agreements with Western, or risk losing its allocation of this valuable power resource. Thus, unless Mesa opts to forego its lowest cost sources of supply, there are no alternatives to preparing and submitting an IRP. The Council could, however, opt to direct staff to further amend the proposed IRP.

Fiscal Impact

The costs associated with supply-side resources are recovered from electric utility customers through the Electric Energy Cost Adjustment Factor (EECAF), an energy cost adjustment mechanism. The EECAF is adjusted as frequently as monthly to reflect increases or decreases in the cost of transmission, purchased power energy, and related costs. The IRP includes DSM programs that may result in a reduction in consumption by customers and thus a decline in both electric utility revenues and costs, therefore having a positive effect on purchased power costs by reducing the most expensive resource acquisitions, at peak, but also having a negative impact on revenues by reducing customer sales.

Coordinated With

The City Attorney's Office has reviewed the IRP as to form.