Resource Planning Advisory Council – Virtual Meeting

Date   December 15, 2022

Time   9:00 – 10:00 AM

Location Online

Agenda

- Current 15-year forecast
- Methodology and major drivers and assumptions
  - Plans for future forecasts and methodological updates
- Options for creating future load scenarios for evaluation in the IRP
- Next steps

Attendees	Organization
Stephen Jennings	American Association of Retired Persons
Autumn Johnson	Arizona Solar Energy Industries Association
Damian Rueda	Davis-Monthan Air Force Base
Allison Moore	Fresh Produce Association of the Americas
Eric Wilson	Pima County
Yves Khawam	Pima County
Catalina Ross	Sierra Club
Sandy Bahr	Sierra Club
Justin Brant	Southwest Energy Efficiency Project
Jeff Powell	Sun Corridor
Kevin Koch	Technicians for Sustainability
Dr. George Hammond	University of Arizona

Alex Routhier	Western Resource Advocates
Murphy Bannerman	Western Resource Advocates
Ruoshui Li	E3
Amanda Duron	TEP
Brianna Robles	TEP
Ilse Morales	TEP
James Elliott	TEP
Joe Barrios	TEP
Lee Alter	TEP
Mike Sheehan	TEP
Nonso Emordi	TEP
Victor Aguirre	TEP

James Elliot (Manager of Pricing, Rates & Revenue Requirements): Forecast Methodology & Results

Slide 3-4

- Question: RPAC Member: You talked about the variation of load within a given year, but could you also talk about the variation of load among future years? How much does the peak change due to certain events (i.e. COVID)? How much does the seasonal load tend to change from one year to the next?

    o Response: Anything that stores energy, typically shifting it from day to night in a flexible way. The technology can be a hydroelectric electro-chemical (batteries), or anything else that doesn't produce energy but can store it, typically with a round-trip efficiency of 80-90%.

- Question: RPAC Member: As climate change becomes more prominent, there are more extreme weather events, do you see these affecting the summer and winter high/low temperatures and is that being accounted for in your peaks?

    o Response: Yes, the temperatures do drive our peaks. Assumptions on temperature peaks and how that will affect the peak and so on will be talked about towards the end of the slides. We will come up with alternative forecasts to see how these change our peaks.

Slide 5

- Question: RPAC Member: There is a steep increase in Total Sales in the early 2030's, where does that come from?

    o   Response: This increase is associated with large customers and expected large customers that we are expecting to come in on that time frame.

- Question: RPAC Member: Is it possible to get a break down of where the increase is coming from in the 2030's? For example, how much of that increase is coming from residential customers, EV, large customers and so on? Also, it would be nice to see how the impacts of the IRA and IIA are affecting TEP's load forecast, specifically the load shapes.

    o   Response: TEP will have an update in the first quarter of next year to provide that data to the RPAC members. Also, large customers that increase the total sales include things such as the Rosemont mine.

- Question: RPAC Member: What are some common data sources for understanding the population and distribution through TEP/UNS territory? Is the delineation of customer demand typically based on population density or is it more tied to meter density? Do the models anticipate EV adoption in the Total sales slide?

    o   Response: On slide 6 you can see the major sources, Eller and U of A forecasting project, market and so on. It is dependent on customer type as opposed to density, in general classes like residential customer will be somewhat homogeneous. TEP has rate classes to separate the residential customers by and there are some differences in those rate classes like basic services rate VS Demand Time of Use rate. Demand will be tied more to the end use equipment rather than density per say; number of customers times the average use of a customer, not really how dense the population is.

- Question: RPAC Member: Didn't TEP drop the proposed Rosemont Mine in its forecast last time? Why did you add back in?

    o   Response: In the 2020 IRP, Rosemont was in the base forecast starting in 2026/2027. The current forecast pushes it out to 2030/2031. Rosemont will be a load growth scenario we will consider modeling with it in and out of the forecast assumptions as part of the 2023 IRP.

- o Follow-Up Response: Rosemont was included in the **2020 IRP**. See the excerpt below from **page 35**. Also, please see the last slide from the presentation today. We can consider scenarios in which Rosemont and/or other large customers (data centers, etc.) are included or not included in our forecast. It might also be worthwhile to compare the impact on our clean energy transition/costs if those large customers come online sooner rather than later – i.e., a large step change in demand versus the gradual changes expected from our residential and commercial customers.

Table 18 - Load Growth Scenarios

Load Scenario	Description
L1	Base load forecast described in Chapter 2
L2	No load growth as required by Decision 76632.[31] For this scenario, the 2020 net retail load was held constant for the duration of the planning period.
L3	Low (<1%) load growth as required by Decision 76632.[32] For this scenario, TEP excluded the load growth associated with the Rosemont mine and assumed lower than anticipated EV sales.
L4	No Rosemont. An Advisory Council member requested that we evaluate a load growth scenarios that excludes the Rosemont mine.
L5	Low EV Sales. For this scenario, TEP assumed lower than anticipated EV sales.
L6	High EV Sales. For this scenario, TEP assumed higher than anticipated EV sales.

- Question: RPAC Member: In Santa Cruz County, there are a lot of commercial buildings that are not used significantly in the summer months, especially July, August, September, and early October. There is also growth in that industry which will continue to be mostly large users not in the highest demand months. Many of those buildings are using solar. Are resource plans looking at both growth in facilities and growth in solar and other generation methods?

  - o Response: TEP SMEs will follow up on responses to this question in the next virtual meeting.

Slide 10

- Question: RPAC Member: Accounting for usage per customer, did you consider other electrification other than EVs?

  - o Response: We haven't built any additional electrification into it.

- o Comment: **Damian Rueda - DMAFB**: For the federal government, we have new goals for carbon-pollution free energy (CFE). This makes natural gas and other fuels a challenge. Our electric power fuel mix does not currently meet those goals. So, DoD is initially tackling much of that with offsets. DM will look at electrification for facilities in the near and long-term future.
  - o Comment: **Kevin Koch - TFS**: I would second including additional electrification beyond EVs. We are seeing a lot of interest in this and expect that interest to grow.

- Question: RPAC Member: What is the scoring process? Are there incentives/extra points for sites located in communities affected by the closure of coal mines or coal plants?
  - o Response: Yes there is, and we received some proposals in those locations.

Slide 15

- Question: RPAC Member: For EVs what are your assumptions about the timing of charging and how controllable that load is?
  - o Response: Next meeting see how we can have an assumed manage/unmanaged load shape taking the RPAC's suggestion.

Next Steps

- Suggestions for next meetings or comments on this meeting.
  - o RPAC Member: Can we expect the RPAC to be updated on the ASRFP? I hope the Jan meeting is for longer than 60 minutes. It feels like it's not enough time, especially with lots of intros. The ACC OM is the second week of Jan, so please do the poll options around that. APS does 3 hours and I think that works well.