



Resource Planning Advisory Council – Virtual Meeting

Date Friday, April 28, 2023
Time 9:00 AM – 11 AM MST
Location Online
TEP HQ
88 E Broadway Blvd,
Tucson, AZ 85701
Conf Rm-HQ-241-A (West)

Agenda

- 9:00 Welcome, Introductions, & Logistics
- 9:10 Updates
- 9:20 Electric Vehicles
- 10:00 Q&A
- 10:25 Break
- 10:55 Next Steps & Topics for Next Meeting

Attendees	Organization
Alex Routhier	Western Resource Advocates
Allison Moore	Fresh Produce Association of the Americas
Autumn Johnson	Arizona Solar Energy Industries Association
Caryn Potter	SWEEP
Catalina Ross	Sierra Club
Chaunce De Roos	Arizona Corporation Commission
Claire Michael	Wildfire
Damian Rueda	Davis-Monthan Air Force Base
Daniel Zepeda	University of San Francisco, California
Doug Patterson	
Dr. George Hammond	University of Arizona
Eric Wilson	Pima County
Jake Jones	IBEW 1116
Jeff Powell	Sun Corridor
Joshua Loyd	1898
Kathy Knoop	General Motors
Kevin Koch	Technicians for Sustainability
Luke Hutchinson	Arizona Corporation Commission
Ryan Witt	Arizona Corporation Commission
Sandy Bahr	Sierra Club
Sarita Morales	IBEW 1116
Stephen Jennings	American Association of Retired Persons
Timothy Sheehan	University of San Francisco, California
Bonnie Medler	TEP
Brianna Robles	TEP
Camila Martins-Bekat	TEP
Ilse Morales Duarte	TEP
Jenny Crusenberry	TEP
Joe Barrios	TEP

Karen Kansfield	TEP
Lee Alter	TEP
Mike Sheehan	TEP
Nonso Emordi	TEP
Rhonda Bodfield	TEP
Ryan Anderson	TEP
Seth Wheeler	TEP
Victor Aguirre	TEP

Camila Martins Bekat (TEP- Principal, Beneficial Electrification) – TEP EV Adoption

Joshua Loyd (1898 & Co.- Senior Consultant) – EV Adoption and Grid Impact Analysis

Slide 12

- **Question:** RPAC Member: Can you provide more information about the timing of each of the phases?
 - Response: Our schedule is finishing up in the July/August time frame, and these phases will be completed in those time frames

Slide 15

- **Question:** RPAC Member: How will you consider the impact of Time of Use tariffs and rates in the final analysis, how will that be implemented?
 - Response: We will work with TEP on the assumptions to see what those impacts are. On slide 15 you can see that with Time of Use rates we can influence when people will charge on off-peak and mitigate the load that may be on-peak. What will be the impact if everyone charges at once, and what type of program can we put into place to mitigate the effect.
- **Question:** TEP Member: Are you implying 24 cars will add 1000kW to the peak?
 - Response: 37 full size trucks, 26 smaller trucks, and 24 smaller vehicles (around 90 vehicles) can increase peak by 1000kW.
- **Question:** RPAC Member: What is the difference between residential off-peak in comparison to CNI customers? Will these be implemented into difference use cases?
 - Response: We will consider that when looking at the way we treat the fleet, it will be slightly different in what sort of load we think they will have. This will be in the fleet model, and we will work with TEP with assumptions and when that charging will occur. I wouldn't say it is explicitly in there.
Operationalize off this study, how do we target our customers for participation and managing a charging program to mitigate those constraints?

Q & A Session

- **Question:** RPAC Member: I did a similar study for the city of Benicia, I am curious to see how electrification will be implemented and the challenges? Will there be a forecast of the emissions that is preventative, or how much emissions will be avoided with this forecast?
 - Response: We don't have that in scope for this project but will have several vehicles where you can calculate around those forecasts to receive those numbers.

- **Question:** RPAC Member: We're not considering vehicle to grid charging in this report, so it won't be significant in the IRP. I think it is a mistake to disregard the potential of vehicle charging at home, including vehicle to grid feeding. Are you taking into consideration any of the future vehicle modeling adoption?
 - Response: Not being considered for this specific study. At the system level, we view EV's as just a distributed battery, we could look at the system impact or difficulty if these do charge at 19 KW and at what point does it break the system so that it provides guidance for these distribution level efforts.

- **Comment:** RPAC Member: We can't get enough trucks to supply the fleet in the county due to shortages from the manufacturing side. Beyond that, all the businesses that want to go electric right now, there's a huge gap in supply for them. Everyone fighting for these vehicles is making it hard to even get those in. We cannot expect the customer base to be managing and interacting with this program, they will not be pushing a button every day or walking somewhere to charge their car at the same time every day. There would have to be an actual type of software that does that automatically does this for us.

- **Question:** RPAC Member: What do you think the impact will be on the shift from working from home on individual's decisions about when and where to charge their vehicles

- Response: There is a challenge of incentives about taking control. We need to be able to plug it in and forget it mentality regardless of being at home or work. We see a vast majority of people charging at home regardless of workplace (at ~80%). Working from home or working in the office will not change things much, where you'd see a change is individuals that don't have access to charging at home.

- **Comment:** RPAC Member: 80% charging at home is a factor of the rate structures, this is a different regulatory issue that is likely unsolvable. If customers were able to charge at other locations at their own rates of electric bill, then the dynamic would change.

- **Question:** RPAC Member: Would work from home change the time of charging? Working from home probably suggests charging at night, where working from home gives you the flexibility to charge throughout the day.
 - Response: Utility has designed the rates to incentivize to charge at the right time. We must have the right programs where it is easy for the customer to participate.

- **Question:** RPAC Member: On the labor side of this, who would be doing the work, the installation maintenance for these EV adoption models, additional training for journeymen linemen?
 - Response: Currently in the process right now of developing our pricing matrix around the right way of charging, but it will probably be another year. Outside and inside services would be responsible for installation and maintenance.

- **Question:** RPAC Member: Is any of this using the government infrastructure grants that are available to TEP? Are you aware that this would have to be signed off?
 - Response: We are trying to leverage those government grants. That was something that the ACC also included in the order when they approved the plan. They said that we should seek out government funding to help.

- **Question:** TEP Member: Will we have a new peak maybe in 10yrs when everyone will plug in at the same time before going somewhere, ex. before Thanksgiving or Labor Day or any holiday.
 - Response: Yes, a new peak could be developed. Even with time of use rates, we've also seen that as you move beyond 50% EV on a particular circuit and more mass adoption, all the charging may be overnight and develop a new peak that's beyond where it might be traditionally now.

- **Question:** RPAC Member: How to leverage this data once we have it to do analysis for diversity impacts to make sure equity can be addressed?
 - Response: Vehicle registration information down the census tracks and have demographics in terms of people that own those tracks. From an equity perspective you can see the areas across TEP where there might be more electrification. Defer to TEP on how they want to share and model that information.

Next Steps

- **Question:** RPAC Member: We were told training would be done for Aurora by the end of April and now April is over and we have none of the things we need?
 - Response: We are trying to provide this stuff as soon as possible, but we didn't promise on having this done by April.

- **Question:** RPAC Member: When are we going to start talking about the modeling? When will we talk about the modeling for the IRP?
 - Response: We had to do analysis on the E3 market price data, also looking at capital costs, and coordinating with APS to have close assumptions. Time is being taken while we coordinate all of these. We are trying to get this to you as soon as possible. Working on other things required by the IRP that are not modeling related. We would like to provide the model with a reference case so that we all have the base case.

- **Question:** RPAC Member: We have no sense of the portfolios, haven't seen the final portfolios, sensitivities, could you provide a spreadsheet that has that?
 - Response: We want to throw in some general scenarios but can do any type of scenario and/or portfolio that you want to see. We want to test out a few portfolios, heavy solar/wind/load so that those are informative on which direction to go.

- **Question:** RPAC Member: Appears TEP did not receive TEP's original NDA from a couple weeks ago, so will send that in again, will send, and the previous times it was sent for your record. Entities that haven't filled out the survey, can they still do that?
 - Response: Yes, add any topics you want, and even if you have put in topics already, you can add others.

- **Question:** RPAC Member: Could you have enough time to run those portfolios and get the IRP done by August 1st?
 - Response: It has been taking a lot longer than initially thought, and getting the modeling done is doable, but to then share that information with others would be challenging.