Chat from June 21, 2023 BayREN Regional Forum

Disclaimer: We have removed duplicates and edited for readability and to remove personal information but have not fact-checked the content of this document. Answers include responses from attendees as well as presenters.

- The San Mateo County study has very comprehensive electrification plans for each home. This summer we are doing training for 3CREN (in the Santa Barbara Area) on making simplified plans that advance efficient electrification and put minimum stress on the grid. The simplest output of a plan can be the equipment list by size and model, that fit on the existing panel capacity.
- HEA runs HomeIntel for PG&E. It's a free online service to help residents understand how best to reduce their energy use (through EE) and the impacts of migrating their home off natural gas. We see an average 10% savings; about $350/year. See HomeIntel.hea.com
- I do know that utilities and the CPUC ARE projecting the effects of electrification on grid demand. There was a full analysis of this done by E3 for the BAAQMD ruling and the CPUC is midstream in analyzing this as well as part of their energy procurement planning process.
- Regarding the Q on any analysis of heat pumps providing cooling and that cooling adding to summer grid load: It makes sense to encourage and select efficient right sized heat pumps to reduce added summer load to the grid while providing the cooling that people will be seeking.
- As a long time grid professional I want to restate something another speaker said… : Electric rates can be reduced by selling more energy kWh across the same system without adding new utility investment in upsized transformers. This will algebraically reduce electric rates per kWh. So that's why I promote efficient electrification (aka Watt Diet, aka Panel Optimization).
- Choosing panel friendly devices (for example) like the 120 Volt Heat Pump Water Heater (HPWH) saves the customer money. Reduces stress on the electric grid compared to other HPWHs and leaves space for their neighbors to electrify too. It lets the utility sell more energy kWh without having to develop as much more local grid capacity kW as they would've with high power versions of the same devices.
- That same David Goldstein efficient line of thought to displace 5 nukes with better refrigerator standards, is the same "Integrative Design" that lead to the Watt Diet to avoid much of the panel upsizing and much of the local distribution upsizing to help our workforce (electricians and utility people) meet the challenge of rapid electrification.
- Are there studies or robust projections on how work-from-home WFH patterns are shifting the electric load profiles for common appliances such as laundry, cooking, DHW, and space conditioning? This is very important to accurately forecast the scaling impacts of building electrification?
- Will anyone discuss the electric load shifting benefits for cost-effective strategies to: [1] Add thermal mass to buildings to improve time constant (Tau)? and [2] Further explore ultra-efficient building shell approaches into CA energy standards such as Passive House? and [3] Strengthen Energy code compliance signals for incorporating Compact Hot Water Distribution Systems in new construction? These may be important partner initiatives for scaling building electrification.
- This CAISO site lets you watch real time how the loads on the grid change through the day and how the supply resource (including grid-scale batteries) change through the day.

http://www.caiso.com/TodaysOutlook/Pages/supply.html. Also check out the demand tab to see the plot of one net demands bottom out usually at noon each day.

- Check out this site to see Day Ahead wholesale costs (values) for electricity and see how low the value are in the sunny hours of the day. Please charge your cars then. http://www.energyonline.com/Data/GenericData.aspx?DataId=22&CAISO___Day-Ahead_Price
- Though isn't it hard to incentivize EV owners to charge during the sunny hours in the day at times if it's during high peak hours? Like in summer, it's sunny past 8 pm, but high peak rates start at 3 pm or 4 pm depending on what rate plan the customer is on. So wondering if the reduced rates reflected with wholesale costs would be integrated into the customer rates in these future electrical rates?
- Good point. Looking at those sites in the season you are in, will help you find the hours of the bottom of the wholesale cost curve. And you are right about the summer. Those low cost hours move earlier in the sunny day away from the air conditioning peak in the afternoon/ evening.
- There is a bill pending right now in the State legislature to require that all EV's include bi-directional charging capacity. Consult the 350 East Bay (or 350 CA) website for details.
- Here is some information on PG&E's bi-directional EV pilots: https://www.pge.com/en_US/residential/solar-and-vehicles/options/clean-vehicles/vgi/v2x-pilots.page
- Good program on EV/solar charging tools NOT CONNECTED TO THE GRID: https://youtu.be/8QcP39Y9mAw. Video recording of lecture by Tom McCalmont on off-grid solar canopies for re-charging EV's, etc. Reach out to Tom McCalmont at Paired Power.
- The bill that would require bi-directional charging all ALL EVs sold in CA is SB233 (by Sen Nancy Skinner). It has passed the state Senate, is now being heard in Assembly committees. Write your support to your Assembly member.
- In PG&E's distribution planning flow diagram of boxes, the panel-saving distribution-grid-friendly (Watt Diet) approaches to electrification equipment choices (not behavioral timing choices) can reduce the growth of the peak load forecast. I hope utilities speed up the recognition of this and then work to encourage right sized efficient versions of electrification. It's time for all parties to become proactive in encouraging the equipment and design choices that will let us ALL decarbonize.
- Yes, definitely send your support for SB233. We need to insure that bidirectional capability is in EVs sold, as the EV sales continue to ramp up.
- AB 205 has required a process to shift charges from variable to fixed rates. The justification is that the marginal social cost of electricity is actually lower than the variable rate (per UC Berkeley research by Borenstein). Is there any concern that the grid won't be able to handle a large increase in load driven by lower variable costs? I.e., that the marginal cost data may not apply in the longer term, or at certain times, or in certain locations?