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How to Focus on Efficient Electrification to save costs and time

Experience in leading cities is showing that focusing on 1) more power efficient electrification devices, 2) right sized EV charging and right sized heat pumps, 3) occasional use of home branch circuit controls* saves building owners money and time as well as reducing pressure on the distribution system and reduces pressure on the workforce in the areas of home circuit installation, main panel upsizing, service wire upsizing, pole top transformer upsizing, and feeder circuit upsizing deferral, and substation transformer upsize deferral.

I strongly recommend having utilities and customers both focus first on electrifying efficiently to leave more space and time for their neighbors to also electrify between cycles of utility distribution upsizing. This will make the whole transition to full electrification smoother and less costly and make it result in lower utility rates compared to BAU electrification.

The lower rates are an artifact of the panel optimization (Watt Diet) leading to more kWh sales per kW of system stress introduced by electrification. This allows better grid system utilization and lower peaks allowing the distribution assets to remain in viable operating condition (not overheated as much by the square of the power flow according to Ohm's Law) for more years as the energy sales grow faster than the peak load growth.

These lower rates and lower installed costs and lower workforce requirements are all very helpful to wide scale electrification of buildings and vehicles charges at buildings.

I look forward to CEC staff implementation of SB 68 that has the intent of having the CEC develop and share information about the approaches to more efficient Electrification practices that can help achieve the savings mentioned.

Thank you for considering my recommendations.

-Tom Kabat
freelance utility planning engineer
<https://www.redwoodenergy.net/watt-diet-calculator>

*These approaches together are called "Panel Optimization" or "the Watt Diet". They are the power (wattage) efficiency analogy to the CEC's original efforts on energy (watt-hours) efficiency.