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February 6, 2023

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Executive Director and Secretary
Washington Utilities and Transportation Commission
621 Woodland Square Loop SE
Lacey, WA 98503

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Management
02/06/2023
State of WASH.
UTIL. AND TRANSP.
COMMISSION

Re: FlexCharging Comments on Puget Sound Energy’s Clean Energy Implementation Plan (UE-210795)

I'm Brian Grunkemeyer from Redmond, and a PSE customer. But I'm also the founder & CEO of FlexCharging, an electric vehicle Demand Flexibility provider. We shift charging to the best time of day, to keep EV charging green & cheap. We also help charge cars before weather causes power outages, improving resiliency.

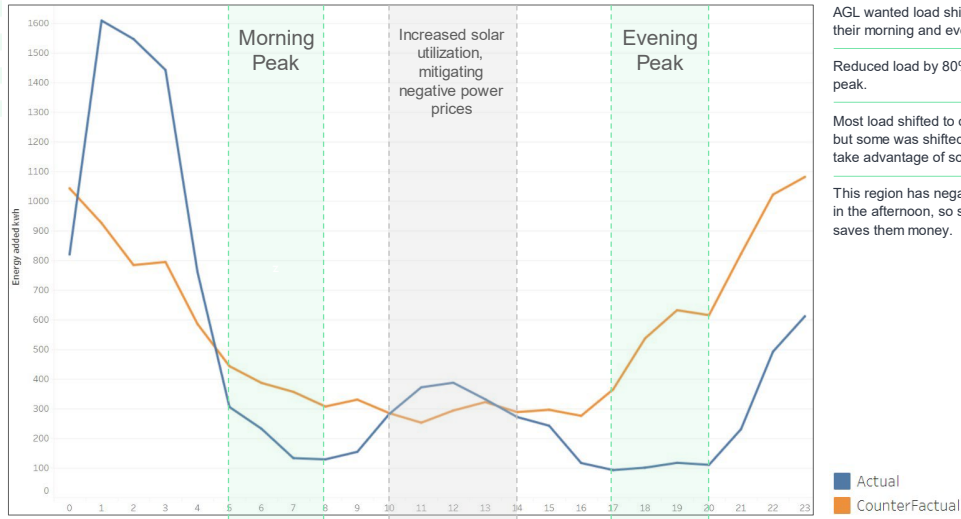
I want to raise the bar for our vision & ambition, by talking about our solution.

We've worked with utilities in Australia and the US to avoid EV charging during peak times. In Australia, we were able to shift 3/4th of the charging to off-peak times, and we helped soak up excess solar. Australia frequently has negative power prices, so this shifting is a great way to lower total costs.

Washington utilities can do the same thing by importing solar from California.

Visualizing Impact

80% of load shifted away from the evening peak



AGL wanted load shifted away from their morning and evening peaks

Reduced load by 80% in the evening peak.

Most load shifted to overnight hours, but some was shifted to midday to take advantage of solar.

This region has negative power prices in the afternoon, so soaking up solar saves them money.

Actual

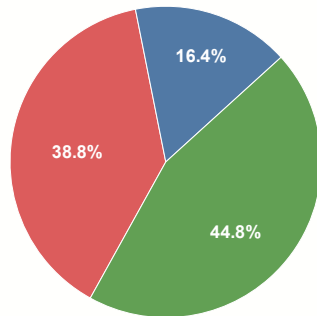
CounterFactual

In Maine, we've worked with Efficiency Maine Trust, who runs behind-the-meter conservation programs for the state. In our pilot, we were able to shift 91% of the power away from their peak period.

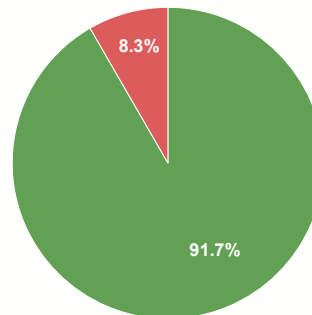
Maine Impact

91% of charging shifted away from peak times

Unmanaged Charging



Managed Charging, Optimized for Price



Off-peak On-peak Mid-peak

Technology like ours will ease the pain of introducing time-of-use rates on an unaccustomed public.

With our project with Rocky Mountain Power, we modeled that we can save up to 45% of the carbon emissions used to charge your car. This is using a marginal CO2 emissions forecast from WattTime. IOU's with the most carbon intensive fuel mix in the state can reduce their carbon intensity *without building new power plants*, and EV's can be part of the solution instead of a problem.

This technology is ready from my company and several others. We could have helped reduce carbon emissions *last year*. It's time to embrace Demand Flexibility to reduce carbon emissions, **now**. Additionally, we can help defer distribution grid upgrade costs.

Demand Flexibility in CEIP

PSE should look at a much higher amount of Demand Response. We want to replace DR with Demand Flexibility, where utilities incentivize doing the right thing every day by default, instead of begging people to shut off power on a few peak days. Demand Flexibility is where we should land, but DR is a significant first step.

Demand Flexibility Standards & Mandates

To echo Jim Lazar's point, smart hot water heaters are a great idea for our state, because we required all new hot water heaters to provide CTA 2045 ports several years ago. Coupled with a great program implementor, our utilities can harness Demand Flexibility with smart hot water heaters similar to the way we aggregate flexible EV loads.

This mandate for a standard was some real forward thinking by our state. You could imagine a similar mandate for EV's, requiring active managed charging to be a supported feature of all electric vehicles sold in Washington State. While there is only the start of an equivalent standard on the telematics side today via COVESA, if the state required a standard by 2026, it would spark the right activities.

CEIP Execution

Execution-wise, I'd like to make sure PSE actually builds something, quickly. They have a habit of issuing RFP's but not necessarily acquiring resources as a result of the RFP. That process makes you wonder whether it's just a legal requirement, instead of a serious attempt at expanding their portfolio. If that's something the UTC can affect, then removing excess jumping through hoops would be useful.

Regulatory Urgency

To spark utility action, it's time that we hear more demands for urgency from the state. What are the 2023 carbon emissions reduction goals for IOU's? Even a quarter percent goal for this year would help.

From an entrepreneurial perspective, PSE & Tesla inspired me to come up with an idea in 2015, spend a year on economics and a year on prototyping, release a service in the market in 2017, pilot it around the world with utilities & the Electric Power Research Institute, raise capital from investors, and get ready to scale. Now in 2023, the market is ready and the need grows every day. It's time to deploy.

Urgency is paramount. This regulatory process is too slow.