

Garcia, Kami

From: tonya parnak [REDACTED]
Sent: Monday, June 5, 2023 11:02 AM
To: -- City Clerk
Subject: BESS Projects on Petaluma's city border

---Warning: Use caution before clicking any attachments. THIS EMAIL IS FROM OUTSIDE OUR EMAIL SYSTEM.---
Dear Mayor McDonnell, City Counselors, City Manager Flynn and Emergency Mgr.
Thomas Jordan,

I hope you saw the 5-26 Argus' opinion article from "Citizens for Battery Transparency", asking for a comprehensive environmental report. These comments are continuing my previous written comments on May 8th. I'm asking that this topic to be agendized for council discussion and consideration of a letter of support for a full EIR at the next city council meeting.

Like most of you, I haven't any technical background in batteries, yet I read and am aware of how important energy storage is for intermittent renewables such as wind and solar. It seems to me the developers are getting ahead of their skis in the rush to install these 2 utility scale battery energy storage systems (BESS) on Petaluma's border. At 575-megawatts, the two BESS together would be one of the largest in the world.

If you lived as close as the neighbors of "Citizens for Battery Transparency" you'd very likely want a full environmental impact report too. Are you aware that a thermal runaway in the lithium-ion batteries or even one cell's failure could have toxic smoke drifting over Petaluma? The chances are small, but the consequences could be huge. If ever a "precautionary" approach were needed, this would be it. It's so many times larger than a Tesla storage pack in your garage that it's not a worthwhile comparison. A precautionary approach would require a full EIR including unbiased battery technology experts weighing in on the best options and safeguards.

After viewing the accident list below (first wiki link), plus the list of smaller accidents below that, you'd likely agree this technology is still on a learning curve. The accidents listed do not include some potential additional risks here on the eastern edge of Petaluma, such as a heat dome descending on the area similar to Seattle's heat dome a couple summers ago, an airplane crashing into the BESS that's in the airport flight path, a massive earthquake destroying water cooling lines, and the danger of wildfire. The chances are small for any one of these scenarios, but the small chance could mean huge consequences.

Listed after the failure/accident lists below are safer battery alternatives, either available now or in development, if the objective is safety foremost and not a rush to install.

List of BESS failures:

https://storagewiki.epri.com/index.php/BESS_Failure_Event_Database

Including Moss Landing fire: <https://www.ksbw.com/article/highway-1-reopened-near-moss-landing-shelter-in-place-lifted/41302918>

Need for more training for firefighters and research: <https://www.fema.gov/case-study/emerging-hazards-battery-energy-storage-system-fires>

Lithium-Iron Phosphate batteries (LFP) are a much safer alternative, with no thermal runaway.

<https://lithiumhub.com/lifepo4-batteries-what-they-are-and-why-theyre-the-best/#:~:text=and%20catch%20fire,-,Is%20LiFePO4%20better%20than%20lithium%20ion%3F,fire%2C%20while%20LiFePO4%20does%20not.> "Can LiFePO4 catch fire?

LiFePO4 batteries are the safest of the lithium batteries, because they will not catch fire, and won't even overheat. Even if you puncture the battery it will not catch fire. This is a massive upgrade over other lithium batteries, which can overheat and catch fire."

<https://www.prnewswire.com/news-releases/american-battery-factory-developing-first-network-of-lithium-iron-phosphate-battery-giga-factories-in-united-states-301498775.html>

Other battery and energy storage alternatives on the horizon with a few I mentioned previously...

<https://reneweconomy.com.au/redflow-lands-biggest-order-yet-20mwh-flow-battery-for-native-american-microgrid/>,

https://www.canarymedia.com/articles/batteries/this-nasa-tech-might-just-spur-a-major-grid-battery-breakthrough?utm_campaign=canary-social&utm_campaign=canary&utm_medium=social&utm_medium=email&hsmi=254523249&hsenc=p2ANqtz--WTzrtpZByZiYqNRa6mD2AD9PcmHngVLJYz0zeLxg6Vn39LYCqoUMIt5_gP1CFwZwK22wdW6rrAcLbEFOVj11jJWG4ow&utm_content=1680784587%3Futm_source%3Dnewsletter&utm_source=twitter

[Zinc-bromine battery - Wikipedia](#),

https://www.renewableenergymagazine.com/solar_thermal_electric/we-are-virtually-unbeatable-in-daily-20230429#,

[Flameproofing lithium-ion batteries with salt | SLAC National Accelerator Laboratory](#) **Flameproofing lithium-ion batteries with salt | SLAC National Accelerator Laboratory**

Finally, vehicle to home such as the F150 Lightning truck and vehicle to grid technology are already being incorporated into some new vehicle models. Virtual power plants (VPP'S) using your home water heater for instance are increasing, so the need to build massive lithium-ion BESS could be obsolete in the not so distant future, especially with

development of longterm storage, such as Redflow's zinc based flow battery example above (1st article under other alternatives). These two proposed BESS are for only 4 hours of energy storage, versus longterm storage by Redflow's zinc based flow battery.

Thank you for your considered attention to this.
Tonya Parnak