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Enchanted Rock Comments on the Behind-the-Meter Zero-Emission Backup Power Technologies â€“ Request for Information

Additional submitted attachment is included below.

October 28, 2022

VIA ELECTRONIC FILING

California Energy Commission
Docket Unit, MS-4
Docket No. 19-ERDD-01
715 P Street
Sacramento, CA 95814

Subject: Comments on the Behind-the-Meter Zero-Emission Backup Power Technologies – Request for Information

Enchanted Rock appreciates the opportunity to provide comments on the Request for Information (RFI) to help define critical research needs around behind-the-meter (BTM) zero-emission backup power.

Enchanted Rock is a microgrid developer, owner, and operator with contracts for 198 MW of resiliency capacity in California. Our generation technology meets the ultra-low California Air Resources Board (CARB) Distributed Generation emissions levels, the cleanest reciprocating engine standard in the nation. Through the use of renewable natural gas (RNG), our technology provides net zero carbon emissions for both resiliency and grid services.

Despite the recent announcement of our first RNG microgrid in California[1], there remain significant barriers to the deployment of behind-the-meter zero-emission backup technologies. Our comments are grouped below to address specific questions/topics raised in the RFI.

What are the "key barriers" and "most significant barriers in the various sectors" to behind-the-meter (BTM) zero-emission renewable backup generation?

The opening section of the RFI correctly states that diesel fueled backup power is often deployed to provide necessary resilience capabilities on a standalone basis or in support of solar and wind solutions. However, while diesel units may be relatively inexpensive to install, they emit large amounts of criteria pollutants and greenhouse gases. These emissions are not only harmful to nearby communities but are facially incompatible with state environmental and climate change goals. Yet the state continues to readily permit diesel generation when clean alternatives exist.

[1] Enchanted Rock to Develop California's Largest Renewable Microgrid to Ensure Resiliency of Microsoft Data Center, June 15, 2022, https://www.prnewswire.com/news-releases/enchanted-rock-to-develop-californias-largest-renewable-microgrid-to-ensure-resiliency-of-microsoft-data-center-301566995.html

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Unfortunately, California's ongoing approval of diesel backup power to these systems is one of the biggest barriers to deploying proven, clean, BTM backup power technologies. Diesel use has soared, even while commercially viable alternatives have emerged, in part because the state has narrowly focused on a set of technologies which face significant technological and economic limits when addressing extended power outages.[2] For example, the National Renewable Energy Laboratory (NREL) REopt® platform can be used to size behind-the-meter resilience solutions according to a facility's size, location, and duration needs. Even just a 24-hour duration requirement for a representative hospital with a 1.5 MW peak would require solar + storage resources that would be infeasible in most geographies and uneconomic without significant subsidization. In many cases, [3]

Given there are proven clean, zero-emission alternatives to diesel backup as demonstrated by Enchanted Rock's RNG-powered solution, the CEC and other state entities should not allow the use of diesel backup power unless absolutely necessary. Instead, programs, regulations, and incentives established to support new investment should focus on displacing or replacing dirty diesel backup power with clean, dispatchable resources that can be called on by California Independent System Operator (CAISO) to address capacity shortages or during outages from extreme heat, wildfires, and Public Safety Power Shutoff (PSPS) events. A transition away from diesel backup power also supports the state's efforts to reach carbon net-neutrality by 2045.

Provide examples of "Technology Deployment and Demonstration (TDD) projects that would roll-out and implement technology mature enough to seek rapid-deployment for near-term benefits."

Enchanted Rock's technology is commercially proven, including over 330 MW of capacity under contract in California, Illinois, New Jersey, Pennsylvania, and Virginia, and over 550 MW of capacity deployed in Louisiana, Mississippi, and Texas with over 700,000 run hours. Our assets protect critical infrastructure and key community facilities including grocery stores, hospitals, nursing homes, water facilities, universities, and government facilities.

Our technology is quickly customized to meet site characteristics, and is typically installed within weeks, depending on the size of the project. Enchanted Rock's technology can also be deployed alongside renewable resources including solar power generation and short-duration batteries, providing a clean renewable power solution that is also resilient in the event of a long duration event.

As for quantifiable near-term benefits aside from long-duration backup power, when our customers are using utility power, our assets operate to provide valuable fast starting, fast ramping services to the grid.

These benefits can be replicated in California. For example, the Microsoft and Enchanted Rock RNG data center backup power project will provide up to 96 MW of net-negative greenhouse gas emission backup power during grid outages, and reduce grid demand during periods of grid stress, as determined by CAISO.

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[2] See Diesel Back-Up Generator Population Grows Rapidly documenting the surge of diesel backup generation throughout California

[3] See REopt Web Tool and capabilities. The REopt® platform is designed to work with solar photovoltaic, wind and other renewable sources of energy generation to "help commercial, government, and individual users with planning and optimizing renewable energy and energy storage and backup systems."<https://reopt.nrel.gov/about/capabilities.html>

What applications or use cases might be the best fit or highest priority for achieving easily replicable solutions with maximum impact?

There are several excellent applications that would critically benefit from microgrids utilizing RNG to provide net-zero emission backup power in California. These include:

- Emergency facilities in wildfire-prone areas - As noted above, backup generation coupled with microgrid technologies allow emergency facilities to island during wildfire-related events, so these emergency facilities can continue providing important emergency services. Further, back-up generation can provide demand response and other critical services during weather related events that may otherwise impact resource adequacy on the system or transmission of electricity to a community. These should be high on the priority list given the increased risk of catastrophic fires due to climate change and its associated drought and extreme weather conditions.
- Community-level microgrids - Enchanted Rock has partnered with Commonwealth Edison and others in a multi-year microgrid demonstration project serving the Bronzeville community in Chicago, IL. The community microgrid includes over 1,000 customers, including multi-family housing units, a community center, and a linked Illinois Institute of Technology campus with its own microgrid.
- Other applications can include critical infrastructure facilities like water treatment plants, hospitals, data centers, government facilities, university buildings, and retail establishments that often serve as community centers during periods of natural disaster or weather emergencies.

Enchanted Rock applauds the Commission for its efforts to address BTM zero-emission backup power technologies and looks forward to continued engagement with the CEC on these critical matters.

Thank you for your consideration of our comments.

Sincerely,

/s/

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