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**Microgrid Resources Coalition Comments on IEPR Commissioner
Workshop on Microgrids**

Additional submitted attachment is included below.

July 30, 2020

Honorable Janea Scott, Vice Chair
California Energy Commission
1516 9th Street
Sacramento, CA 95814



RE: Docket 20-IEPR-04 Comments on IEPR Commissioner Workshop on Assessing the Future Role for Microgrids in California

Dear Vice Chair Scott,

The Microgrid Resources Coalition commends the California Energy Commission for its leadership in recognizing the crucial role that microgrids will play in the state's clean energy future and including microgrids in the Commission's next Integrated Energy Policy Report (IEPR). The MRC appreciates the opportunity to provide comments on the IEPR Commissioner Workshop and offers some recommendations for the Commission to consider as it refines the IEPR to include microgrids and resiliency.

Based on the commentary and presentations from the workshop, the MRC shares the following observations with the Commission:

- California needs a diverse portfolio of distributed clean energy resources and market participants to successfully achieve the state's decarbonization and resilience goals to mitigate the impacts of climate change.
- Diesel generation is an unacceptable solution for maintaining reliable power and long duration resilience within all sectors of the economy. The workshop made it clear that other proven, cost-effective solutions exist that not only provide services during outages, but also in daily grid operations.
- Departing load charges, which create uncertainty for customers looking to make investments in microgrids and hinder the ability of microgrids to be fully monetized, represent a significant barrier to the deployment of microgrids and do not account for the resiliency and ancillary benefits offered by microgrids.
- State energy policy should encourage microgrids that feature thermal energy resources, such as combined heat and power, waste heat recovery, or thermal energy storage.
- As cleaner fuels become more commercially available, such as biogas, hydrogen, and other fuels of the future, they will supplant the use of natural gas in California.

The MRC suggests the following actions be taken by the Commission in order to fully realize the benefits that microgrids can provide the state of California:

- The Commission should make an official determination that microgrids provide value and benefits to all ratepayers, demonstrated by the Commission's long-standing microgrid R&D initiatives and projects funded through the EPIC program.
- The Commission should make an official recommendation to the California Public Utilities Commission (CPUC) that microgrids be exempt from departing load charges. The justification being that the value and benefits of microgrids have been proven through the EPIC program and

it is the intent of the state to make all communities more resilient by removing barriers to microgrids.

- The Commission should prioritize the goal of decarbonization, not just electrification, by encouraging the research, development, and deployment of advanced clean fuels to decarbonize the gas system.

The IEPR should codify the wide range of values and benefits offered by microgrids to ratepayers and the state

Microgrids provide a multitude of benefits to ratepayers, communities, and the grid. Over the past ten years, the Commission funded the deployment of 45 microgrids with \$136 million invested and over \$100 million in matching funds. The microgrids funded were deployed at critical facilities, industrial sites, military bases, and in communities showcasing the breadth of applications that microgrids can support. Observing the sheer number of different organizations, companies and individuals that make up the workforce involved in the various microgrid projects and research initiatives funded by the EPIC program is impressive. The workshop provided a small snapshot of the larger economic opportunity that microgrids can provide and the great potential for future home-grown innovation in California.

The resounding support for microgrids across different stakeholder groups was universal throughout the workshop proceeding. The Commission has sufficiently demonstrated the clear value and benefits that microgrids provide ratepayers in California with a decade of successful research and development of commercially viable microgrid technologies. The MRC encourages the Commission to make an official declaration that microgrids provide value and benefits to all ratepayers and the state of California in the IEPR based on the results of the Commission's historic funding microgrid R&D initiatives and projects through the EPIC program.

Departing load charges do not protect customers from cost shifting

Departing load charges constitute a significant barrier to the deployment of microgrids. These charges create uncertainty for customers looking to make investments in microgrids and hinder the ability of microgrids to be fully monetized. Departing load charges are a well-documented problem for microgrids across the state. The Marine Corps clearly outlined the challenges that departing load charges presented to their microgrid in Miramar. What was astonishing was that the Marine Corp stated that they still did not know what the true economic costs and benefits of the microgrid entail because of these charges being assessed into perpetuity.

Following the Miramar Microgrid presentation and commentary concerning departing load charges as a barrier to deployment, Commissioner Shiroma commented that the reason departing load charges exist is to protect those non-participating customers from cost shifting.

Respectfully, the idea that departing load charges are preventing cost-shifting is a fallacy. Departing load charges are not "protecting" non-participating customers by ensuring indifference from those customers seeking microgrids. Rather, these charges are preventing non-participating customers from achieving their resiliency and clean energy needs by punitively assessing fees on the very solutions that could help them, as well as the state's climate goals. This substantial added cost puts microgrids out of reach for those that can benefit most from clean, resilient energy located within their community.

Conversely, approving hundreds of millions of dollars for indefinite amounts of diesel generation is a cost shift onto all ratepayers and the communities in which those polluting resources will be sited, causing significant adverse environmental and health impacts on residents, and is further compounded by the Pandemic. Allowing the IOUs to initiate Public Safety Power Shutoffs (PSPS) whenever the risk of their poorly maintained infrastructure causing a wildfire is great enough is a cost shift and remains unaccounted for in the overall calculus.

A study by the Manhattan Institute that examines the economic justification for initiating PSPS events finds that, *“from a societal perspective, the costs to individuals and businesses from preemptive shutoffs of electricity exceed the benefits gained by reductions in the likelihood of a wildfire... From an electric utility’s perspective, preemptive shutoffs are economically rational. They reduce the utility’s potential liability from a wildfire caused by a failure of, or damage to, electric operations equipment, even if that equipment is working properly, while the utility incurs no costs, other than lost revenues from forgone electricity sales. Hence, preemptive shutoffs are a form of low-cost insurance”*.¹

The study analyzes the Value of Lost Load (VOLL) for preemptive power outages and concludes that *“it is reasonable to assume a range of VOLL between \$10/kWh and \$20/kWh for all affected California customers. For a residential customer using about 16 kWh of electricity per day, that translates into a daily cost of between \$160 and \$320”*. The study does not quantify the impact on businesses due to the wide range of operational costs that could be considered, but it is safe to assume from other sources that the financial impacts to businesses are significantly greater.²

As one example, the study estimates the range of costs associated with the October 9-12, 2019 preemptive shutoff to be between **\$846.9 million and \$1.69 billion**. Stanford University estimated the costs of this same event to be **\$2.5 billion**.³ This is for a single PSPS event.

The study further states, *“By comparison, as discussed above, we estimate an expected cost of an electric operations–caused wildfire of \$272.2 million in PG&E’s entire high fire-risk service territory under worst-case conditions over a three-day period. Thus, the lost value of electric service to the subset of PG&E customers affected by the October 9–12 PSPS is more than triple the expected cost of an electric operations–caused wildfire in PG&E’s entire high fire-risk territory under poor weather/fuel conditions and assuming that all of PG&E’s T&D equipment is in poor condition”*.

Microgrids that provide resiliency and decarbonization benefits are not shifting costs onto other customers. Indeed, PSPS events are shifting an order of magnitude of costs onto affected customers and the state. Considering the magnitude and cumulative impact of PSPS events dwarfs the impact of the 2001 energy crisis, one could argue that microgrids enabling community resilience are the solution to the greatest cost shift customers have experienced in the history of electric service in California.

The assessment of punitive fees on resilient energy solutions, such as departing load charges applied to microgrids, is a policy choice. California regulators choose to assess these charges on microgrids, just as regulators choose to exempt net metering customers from these charges. When conducting a feasibility analysis to determine the potential costs of a microgrid, departing load charges are included in project financial estimates as an additional fee for the operation of the microgrid. These fees are not part of the

¹ <https://www.manhattan-institute.org/managing-california-wildfire-risk>

² [Senate Energy Committee PSPS Oversight Hearing, November 18, 2019](https://www.senate.ca.gov/energy/committees/energy-committee/energy-committee-hearings/2019-11-18-senate-energy-committee-psps-oversight-hearing)
<https://www.wsj.com/articles/california-blackouts-force-businesses-to-tally-their-losses-11571942299>

³ <https://woods.stanford.edu/news/pge-power-outages-bring-high-economic-costs-california>

real cost of designing, building, or maintaining a microgrid. For that reason, the MRC does not believe departing load charges are a financial barrier, but rather a regulatory one.

The MRC strongly encourages the Commission to make a new policy choice in its next rendition of the IEPR by recommending that microgrids be exempt from all departing load charges because of the clearly demonstrated value they provide to all ratepayers, which was proven over the course of the past decade with EPIC-funded projects. Furthermore, and more importantly, microgrids are the solution to a much more significant cost shift on communities and the state – PSPS events – that will continue to happen in the absence of rapid, wide-scale deployment of resilient, distributed energy solutions across California.

Thermal energy features in microgrids should be recognized and encouraged in the IEPR

The MRC asked a question in the workshop about whether any of the microgrids featured in the workshop presentation managed electric and thermal energy needs. The silence in response was intriguing and a bit surprising. Finally, an answer that came from one of the panelists was that only electric energy was addressed. Perhaps, the facilities in question did not have high thermal energy needs. Nevertheless, the manner in which this question was answered highlights the need for the Commission to consider how microgrids can play a role in managing thermal energy.

Electric and thermal energy resources have fundamentally different properties that must be recognized and considered when developing policies and regulations for microgrids. Thermal energy is a much more efficient resource for heating and cooling than electric energy. It also has a significantly lower cost, as large scale electrification of heating and other thermal applications is a very expensive proposition in California.

This dynamic becomes incredibly important when considering the combined power and resilience needs of facilities with extensive plumbing and large energy loads, such as healthcare, manufacturing, food processing, and water treatment facilities. Achieving significant efficiency gains in thermal energy uses with microgrids, such as those that utilize combined heat and power, waste heat recovery, or thermal energy storage, is a much more cost effective and practical way forward than attempting to electrify some of these thermal energy uses and it reduces overall GHG emissions. The loading order should be recognized with respect to microgrids and the energy efficiency they provide. Microgrids addressing customer electric and thermal energy needs allow large commercial and industrial ratepayers to achieve meaningful decarbonization and long duration resilience without sacrificing their power and HVAC needs to maintain operations. Microgrids that optimize thermal energy resources should be recognized and encouraged in the IEPR.

Investment in the research, development, and deployment of clean fuels is needed to meet California's deep decarbonization and resiliency goals.

Decarbonization does not equate to electrification. Meeting the state's decarbonization goals does not require California to fully electrify the energy system, but should combine different pathways. California does not have to render the natural gas infrastructure a stranded asset. Instead of accelerating its path to obsolescence through obsessive electrification, which will exacerbate equity issues, California should clean up its gas infrastructure by incorporating cleaner fuels into the system, such as biogas and percentages of hydrogen. If the goal is to reduce emissions, while maintaining affordability to combat

climate change, then state energy policies should maintain a focus on cost effectiveness and accelerating the use and deployment of cleaner fuels.

As mentioned earlier in these comments, there is a significant subset of customers with high thermal energy needs, and electrifying these energy uses is not cost effective or practical from a power efficiency standpoint. These customers are not going to have their power and resilience needs met by simply installing solar and batteries and electric heat pumps have capacity limitations. Furthermore, there are political considerations involving customer choice that must be acknowledged. Why fight the restaurant industry about whether they should use gas for commercial cooking? The state should make an effort to add more biogas and clean fuels into the system, which will keep more businesses and industries operating in California. Clean thermal energy solutions are needed to achieve deep decarbonization while maintaining a robust economy that keeps jobs in manufacturing and industry in California.

Microgrids with a flexible fuel foundation can provide long duration resilience and deep decarbonization of the energy system by incorporating higher levels of renewables while maintaining reliability and grid stability. Integrating clean fuels such as biogas, biomass, and hydrogen into microgrids is possible today, as demonstrated by the success of the Miramar and Stone Edge Farm microgrids, and can be expected to become increasingly cost effective based on established trends.

The Commission should prioritize decarbonization, not just electrification, by encouraging the research, development, and deployment of advanced clean fuels to decarbonize the gas system. As biogas, hydrogen, and other clean fuels of the future become more commercially available, they will supplant the use of natural gas and allow the state to phase out the use of fossil fuels in both the energy and transportation sectors. The Commission can accelerate the state's decarbonization efforts by providing technical assistance and funding for the research, development and deployment of alternative fuels that can be integrated into the existing gas infrastructure to decarbonize the natural gas pipeline system while maintaining reliability and affordability.

Conclusion

Diversity is the cornerstone of resiliency in any complex system. This is especially true for California's energy system. Microgrids and clean fuels will help California meet its deep decarbonization and clean energy goals while providing meaningful long duration resilience for customers and communities and improving overall system reliability. The MRC applauds the Commission for recognizing the role that microgrids will play in California's clean energy future and encourages the Commission to make microgrids a cornerstone of the state's energy policy for a more sustainable energy system.

Respectfully submitted,



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