

Date of Hearing: April 24, 2024

ASSEMBLY COMMITTEE ON UTILITIES AND ENERGY

Cottie Petrie-Norris, Chair

AB 3107 (Connolly) – As Amended April 16, 2024

SUBJECT: State Energy Resources Conservation and Development Commission: microgrids: study

SUMMARY: Requires the California Energy Commission (CEC) to conduct a study on the benefits of microgrids for local governments and communities, and submit a report on the study to the Legislature by January 1, 2027.

EXISTING LAW:

- 1) Establishes the California Public Utilities Commission (CPUC) has regulatory authority over public utilities, including electrical corporations. (California Constitution Article XII, §§ 3 and 4)
- 2) Defines “microgrid” to mean an interconnected system of loads and energy resources, including distributed energy resources, as defined, energy storage, demand response tools, or other management, forecasting, and analytical tools, appropriately sized to meet customer needs, within a clearly defined electrical boundary that can act as a single, controllable entity, and can connect to, disconnect from, or run in parallel with larger portions of the electrical grid. (Public Utilities Code § 8370)
- 3) Requires the CPUC, in consultation with the CEC and the California Independent System Operator (CAISO), to take specified actions by December 1, 2020, to facilitate the commercialization of microgrids for distribution customers of large electrical corporations, including developing microgrid service standards necessary to meet state and local permitting requirements and developing methods to reduce barriers for microgrid deployment without shifting costs between ratepayers. (Public Utilities Code § 8371)
- 4) Requires local publicly owned electric utilities (POUs) to develop and make available a standardized process for the interconnection of microgrids, including separate rates and tariffs, as necessary. Specifies the microgrid rate design shall result in no cost shifts from a microgrid customer to a nonmicrogrid customer. (Public Utilities Code § 8372)

FISCAL EFFECT: Unknown. This bill is keyed fiscal and will be referred to the Committee on Appropriations for its review.

BACKGROUND:

Microgrids – Generally, a microgrid is understood to be a self-contained, small (relative to the electric grid), electricity system with the ability to manage critical customer resources, disconnect from the electric grid when the need arises, and provide the customer with different levels of critical support. A microgrid can be as simple as a diesel-fuel generator located near a building, such as a hospital, that is able to provide needed power during an electric power outage. Or a microgrid can be an entire campus or community that is outfitted with solar and

other technologies. Customers tend to seek reliability and resiliency services from microgrids. In particular, customers may value the desire for sufficient resources both at the utility scale, but also at the local level, in order to better manage challenges. Although each microgrid can vary in component configuration, size, and applications, generally, microgrids are made of a combination of distributed energy resources (DER), energy storage, and demand response capabilities. Microgrids are still a relatively nascent and expensive concept. Continued research and understanding of their operations and implications within the electricity landscape is warranted.

Benefits of Microgrids – Recent emergency and natural disasters, particularly the increased risks of more disasters due to climate change, have spurred the interest to develop “resilient” electric and gas utilities and services. From wildfires, to flooding, to extreme weather events, microgrids may help provide additional reliability and resiliency to allow a customer or community to withstand the event while maintaining their electric power for critical services. In addition to the increased reliability, microgrids with properly configured controllers have the potential to provide lower electricity bills for the customer and cleaner air by displacing the need for energy generating resources with higher emissions. Specifically, microgrids can control the rate and schedule of distributed energy generation resources, coordinate the use of energy storage, and implement demand response. However, many microgrids to date, especially those utilized for backup during public safety power shutoff events, have run on diesel or other fossil fuels. Even landmark microgrids, such as the project at Blue Lake Rancheria, are comprised of solar and storage, alongside existing diesel generators.¹

Microgrid Commercialization – Microgrid development is largely considered to be at a somewhat nascent stage. However, in recent years the state has been involved in multiple efforts to explore the use, application, and commercialization potential of microgrids. Most notably, the CEC has funded research through the ratepayer-funded Electric Program Investment Charge (EPIC) program for projects that use microgrids to support high penetrations of renewables and the operations of critical facilities, including hospitals, fire stations, and regional command centers. These projects are used to collect data to demonstrate how they are working to reduce greenhouse gas emissions (GHG), improve reliability, and increase resiliency and flexibility to critical services in emergencies. The demonstrations are helping to increase the knowledge regarding the operations of microgrids. Additionally, the CEC, CPUC, and CAISO were working with stakeholders to develop a road map for actions needed to commercialize microgrids in California.² The roadmap was put on hold with the passage of SB 1339 (Stern, Chapter 566, Statutes of 2018) which required specified actions to help commercialize microgrids; it is unclear to committee if the roadmap has been completed.

SB 1339 – In 2018, the Legislature passed SB 1339 (Stern, Chapter 566, Statutes of 2018) which required the CPUC, in consultation with the CEC, and the CAISO, to take specified actions by December 1, 2020, to facilitate the commercialization of microgrids for distribution customers of large electrical corporations. In response to SB 1339, the CPUC initiated Rulemaking 19-09-009. Since the start of the proceeding the CPUC has issued multiple decisions in various tracks,

¹ Blue Lake Rancheria microgrid 2 page summary; <https://bluelakerancheria-nsn.gov/wp-content/uploads/2017/08/BLR-Microgrid-2-Page-Summary-Flyer.pdf>

² 16-EPIC-01, Jose Aliaga-Caro and Peter Klauer, July 25th 2017 presentation; file:///C:/Users/shybutla/Downloads/TN220364_20170725T151033_A_Roadmap_for_Commercializing_Microgrids_in_California.pdf

largely focused on resiliency benefits provided by the microgrids. The most recent decision established a Microgrid Incentive Program,³ a program that targets placement of community microgrids in disadvantaged vulnerable communities to support populations impacted by grid outages. A multi-property microgrid tariff is the subject of the subsequent, ongoing track of the proceeding. Aside from the microgrid proceeding, the CPUC has active proceedings that are relevant to the deployment of microgrids, including a specific proceeding on DERs (R. 21-06-017, and its predecessor, R. 14-08-013).

COMMENTS:

- 1) *Author's Statement.* According to the author, “Microgrids can provide clean, affordable, locally-sourced energy to communities, enhance reliability, and efficiently alleviate grid stress during emergency reliability events. Recent efforts to develop microgrids in Oakland, Lancaster, and Berkeley, among others, have been obstructed by regulatory constraints, leaving us with few examples and limited information on how to most effectively build microgrids. This bill requires the Energy Commission to study the benefits of microgrids for communities and local governments, closing existing knowledge gaps and setting the stage for further action on microgrids in years to come.”
- 2) *What More Remains?* This bill requires the CEC to conduct a study on the benefits of microgrids for local governments and communities. As noted above, due to the passage of SB 1339 (Stern, Chapter 566, Statutes of 2018) much of the work on microgrids has fallen to the CPUC and focused on particular use-cases associated with resiliency benefits. Simultaneously, the CEC has been incentivizing microgrids with ratepayer dollars through the EPIC program. However, some of these EPIC-funded projects may run afoul of existing statute, making their operation of microgrids absent state dollars difficult.⁴ The study proposed under this bill, while currently unspecific in its target, may provide a venue to assess some of these issues, providing a valuable resource for microgrid development in the state. Moreover, the study called for in this measure could also provide an opportunity for the CEC, CPUC, and CAISO to complete – or update – their microgrid roadmap, as mentioned above.
- 3) *Related Legislation.*

AB 3111 (Calderon) requires distributed energy resources (DER) and aggregated DER, as specified, to report to the CEC various details regarding the location, size, and contracting information of the resources when seeking a permit or enrolling in an aggregation program. Additionally requires the DER applicant to attest, under penalty of perjury, to a prescribed definition of “electrical corporation.” Requires the CEC to publicly notice all filings pursuant to this bill within five days of receipt. Status: *set for hearing on April 24th* in this committee.

³ D. 23-04-034; CPUC; *Decision Adopting Implementation Rules for the Microgrid Incentive Program*; R. 19-09-009; April 14, 2023.

⁴ For example, the Berkeley Efficient and Resilient Mixed-Use Showcase (BERMUS) is a 50-unit affordable housing complex with associated microgrid. The EPIC goals are to “validate scalability and replicability of the mechanical systems in the building design. However, the BERMUS project has struggled under existing mastermeter laws. EPC-21-029; <https://www.energy.ca.gov/filebrowser/download/4087>

SB 1148 (Blakespear) permits specified multifamily dwellings that include DERs with energy storage to be mastermeter, among other changes. Status: set for hearing on April 22nd in the Senate Committee on Energy, Utilities and Communications.

4) *Prior Legislation.*

SB 1215 (Stern, 2020) proposed changes to existing law in order to promote the use of microgrids, as defined, for electric generation. Specifically, required: the CPUC to create a database of critical facilities and infrastructure and required the CPUC and the CAISO to develop a methodology to account for the resource adequacy value of distributed storage by March 31, 2021. Status: *Died* – Assembly Committee on Utilities and Energy.

SB 774 (Stern, 2019) required specified actions related to the deployment of microgrids, including requiring exclusive utility-ownership, and, as such, ratepayer funding, of microgrids that are located in the electrical corporation's side of the electrical distribution grid. Status: *Died* – Assembly Committee on Utilities and Energy.

SB 1339 (Stern) requires the CPUC, in consultation with the CEC, and the CAISO, to take specified actions by December 1, 2020, to facilitate the commercialization of microgrids for distribution customers of large electrical corporations. Requires the governing board of an electric POU to develop and make available a standardized process for the interconnection of a customer-supported microgrid, including separate electrical rates and tariffs, as necessary. Status: Chapter 566, Statutes of 2018.

REGISTERED SUPPORT / OPPOSITION:

Support

Does not reflect the bill in print.

Opposition

Does not reflect the bill in print.

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