
**SENATE COMMITTEE ON ENERGY, UTILITIES AND
COMMUNICATIONS**
Senator Ben Hueso, Chair
2019 - 2020 Regular

Bill No: SB 774 **Hearing Date:** 4/24/2019
Author: Stern
Version: 4/8/2019 As Amended
Urgency: No **Fiscal:** Yes
Consultant: Nidia Bautista

SUBJECT: Electricity: microgrids

DIGEST: This bill requires 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.

ANALYSIS:

Existing law:

- 1) Authorizes the California Public Utilities Commission (CPUC) to fix rates, establish rules, examine records, issue subpoenas, administer oaths, take testimony, punish for contempt, and prescribe a uniform system of accounts for all public utilities, including electrical and gas corporations, subject to its jurisdiction. (Article 12 of the California Constitution)
- 2) Requires that all charges demanded or received by any public utility for any product, commodity or service be just and reasonable, and that every unjust or unreasonable charge is unlawful. (Public Utilities Code §451)
- 3) Provides the CPUC with general, broad authority to regulate every public utility in the state. (Public Utilities Code §701)
- 4) Authorizes the CPUC to require a public utility to correct any rates, practices, equipment or behavior that is unjust, unreasonable, unsafe, improper, inadequate, or insufficient. (Public Utilities Code §761)
- 5) Prohibits microgrid projects that use diesel power generators from receiving Electric Program Investment Charge (EPIC) funding. (Public Resources Code §25711.8)
- 6) Requires the CPUC, in consultation with the State Energy Resources Conservation and Development Commission (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 (IOUs). (Public Utilities Code §8370 et seq.)

This bill:

- 1) Requires each IOU to collaborate with local governments and other interested parties in its service territory to identify locations where microgrids may provide increased electrical resiliency.
- 2) Authorizes IOUs to file applications with the CPUC to invest in, and deploy, microgrids to increase resiliency, require the CPUC to approve, or modify and approve, certain microgrid applications that use a cost-recovery mechanism that recovers costs from all ratepayers in proportion to the benefits they receive, and require that an IOU's microgrid investments earn a reasonable rate of return.
- 3) Requires IOUs to be exclusively responsible for planning for, making investments in, and operating energy resources that provide electrical distribution grid operations or services on an IOU's side of the meter.

Background

Microgrids. Generally, a microgrid is understood to be a self-contained, small, 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. A microgrid can be an entire neighborhood 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, such as power outages due to wildfire, flooding, etc. Although each microgrid can vary in component configuration, size, and applications, generally, microgrids are made of a combination of distributed energy resources (DERs), storage, and demand response capabilities.

Resiliency benefits of microgrids. The 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 service. From wildfires, to flooding, to extreme weather events, microgrids may help provide additional reliability and resiliency to allow a 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, microgrids can not provide full protection against a disaster, such as a flood or fire. Moreover, microgrids may provide some power source when power is shutoff, however, they are likely to be a more limited power supply that may not be operate all the appliances and devices in a given building or community.

Wildfire mitigation plans. In response to the recent catastrophic wildfires that have been ignited by electric utility infrastructure, and the continued threat of wildfires, the CPUC has authorized electric IOUs to proactively deenergize power lines to mitigate the risk. As a requirement of SB 901 (Dodd, Chapter 626, Statutes of 2018), electric utilities must file wildfire mitigation plans with specified information. As part of those plans, electric utilities must also develop protocols to deenergize electric lines during weather events and fuel conditions that might result in electric lines igniting wildfires. The wildfire mitigation plans also require additional mitigation efforts, including vegetation management and grid hardening activities.

State efforts to commercialize microgrids. CEC, CPUC, and CAISO are working with stakeholders to develop a road map for actions needed to commercialize microgrids in California. Additionally, the CEC is funding research through the 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, improve reliability, and increase resiliency and flexibility to critical services during emergencies. In 2018, the CEC awarded nine microgrid projects for a wide variety of applications including military bases, disadvantaged communities, university sites, communities, and third-party-managed microgrids. The demonstrations are helping to increase the knowledge regarding the operations of microgrids. In 2017, the CEC issued an EPIC funding solicitation to promote research of commercialization of microgrids. The solicitation is intended to inform opportunities where microgrids can be developed into standardized configurations that are easily repeatable to provide benefits to the grid and customers. Additionally, the CPUC has active proceedings that are relevant to the deployment of microgrids, including a specific proceeding on DERs (R. 14-08-013) and another on smart grids (R. 08-12-009). Nonetheless, microgrid development is

largely considered to be at a somewhat nascent stage. California has already started studying microgrids. In 2018, the CEC Research and Development Division awarded a grant to the Electric Power Research Institute to develop a publicly accessible tool to provide the value and optimization of microgrids for different configurations and different customers.

Ratepayer impacts of utility-owned microgrids. This bill would authorize utility-ownership of microgrid projects, resulting in ratepayers funding these projects. However, as noted above microgrids can provide certain customers with alternative sources of power during a power outage, but in many cases that is a benefit not shared by all ratepayers. To the extent microgrids are paid for by ratepayers, those projects should be in very narrow circumstances with clear benefits to the overall grid, not only the customers benefiting from the back-up power. *As such, the author and committee may wish to amend this bill to ensure the applications that are approved are only for those narrow circumstances where the microgrid projects provide a direct benefit to the electrical grid to the benefit of all ratepayers, as determined by the CPUC. The author and committee may also amend this bill to provide the CPUC with the discretion to deny applications that do not meet the requirements. The author and committee shall consider additional amendments to ensure there are no cost-shifts to non-participating customers and other provisions to clarify the language.*

Prior/Related Legislation

AB 1144 (Friedman, 2019) would require the CPUC to allocate 10 percent of the 2020 funds from the Self Generation Incentive Program for the installation of energy storage and other eligible distributed energy resources at facilities that provide critical infrastructure to communities in High Fire Threat Districts to support community resiliency. The bill is pending consideration by the Assembly Committee on Natural Resources.

SB 1339 (Stern, Chapter 566, Statute of 2018) required the CPUC, in consultation with CEC, and the CAISO, to take specified actions by December 1, 2020, to facilitate the commercialization of microgrids for distribution customers of large IOUs. The bill required the governing board of a local publicly owned electric utility to develop and make available a standardized process for the interconnection of a customer-supported microgrid, including separate electrical rates and tariffs, as necessary.

SB 901(Dodd, Chapter 626, Statutes of 2018) addressed numerous issues concerning wildfire prevention, response and recovery, including funding for mutual aid, fuel reduction and forestry policies, wildfire mitigation plans by

electric utilities, and cost recovery by electric corporations of wildfire-related damages.

AB 2868 (Gatto, Chapter 681, Statutes of 2016) required IOUs to file applications with the CPUC for programs and investments to accelerate widespread deployment of distributed energy storage systems.

FISCAL EFFECT: Appropriation: No Fiscal Com.: Yes Local: Yes

SUPPORT:

San Diego Gas & Electric

OPPOSITION:

None received

ARGUMENTS IN SUPPORT: According to the author:

“With the increased threat of climate change creating greater threat of extreme wildfire events, the state should do everything it can to prepare for natural emergencies while also considering the benefits any such assets can provide to mitigate the effects of climate change, and to the grid function in general. Customized and tailored emergency energy resiliency microgrids developed via collaboration between electrical corporations, with their infrastructure planning focus, local governments, and local communities that could, when not in use for emergency purposes, provide other benefits to the community including cost effective integration of new emission reducing distributed energy technologies represent a significant opportunity that the state should pursue. The legislature should encourage and enable electrical corporations to identify opportunities for, and to build, own, and operate these types of microgrids, working in partnership with local governments.”

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