**BEFORE THE PUBLIC UTILITIES COMMISSION**

**OF THE STATE OF CALIFORNIA**

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**LOCAL GOVERNMENT SUSTAINABLE ENERGY COALITION'S RESPONSE COMMENTS TO ASSIGNED COMMISSIONER'S SCOPING MEMO AND RULING**

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**Introduction**

Pursuit to "ADMINISTRATIVE LAW JUDGE'S RULING REQUESTING DRAFT PROPOSALS FROM RESPONDENTS AND STAKEHOLDERS REGARDING DATA DEFINITION AND GUIDELINE ENHACEMENTS," the Local Government Sustainable Energy Coalition (LGSEC) provides the following responses to questions presented in this ruling. LGSEC is not submitting Draft Data Definition and Guideline Proposals at this time, though hopes that the California Public Utilities Commission (CPUC or Commission) will provide opportunities to comment on these submissions in this proceeding.

LGSEC represents 17 cities and 23 counties, jurisdictions that govern almost three-quarters of the state's population, and close to two-thirds of California's electricity demands. LGSEC members serve as administrators, designers and lead implementors of a host of community choice aggregator (CCA), energy efficiency, demand response, building decarbonization, transportation electrification and other energy supply, demand, and management programs.

Local governments (LG) have a responsibility to safeguard the well-being of the communities they serve. As wildfires and extreme heat have increasingly emerged as threats, and given electricity's centrality to economic development, a major part of that obligation is to foster resilience in the face of grid disruptions. The uninterrupted flow of electricity is essential to support day-to-day economic, public health and safety, and social activities. Extended outages can threaten life, well-being, and security. Even momentary flickers, or voltage sags, can push electricity-dependent equipment offline, and accelerate wear and tear.[1] Energy is needed for core LG functions, including pumping water, processing wastewater, and delivering emergency services, among other crucial tasks. Households and businesses are financially and economically dependent on reliable power provision.

Local governments rely on an understanding of outage risks to design emergency response and resiliency measures, as well as make distributed energy resources (DER) investment decisions.  This might include supporting resiliency centers, cultivating disaster relief plans and networks, and fielding backup equipment. In cases where utility-provided reliability is insufficient, LGs may consider standing up their own resources to fully or partially replace investor-owned utility (IOU) service.

General Order (GO) Number 166 – issued to insure that electric utilities work to minimize damage and inconvenience to the public resulting from system failures, outages, or hazards posed by damage to electric facilities – was written when large transmission network outages were of greatest concern, prompted by a 1996 widespread disruption.[2] Since then electric utility outages have often been tied to distribution-related disruptions, with weather-related and

[1] Pilot Evaluation of Electricity-Reliability and Power-Quality Monitoring in California's Silicon Valley with the I-Grid® System | Energy Markets & Policy
[2] Blackout of 1996

wildfire risk management outages more recently rising in frequency. According to Climate Central, California has experienced 145 major weather-related power outages since 2000, with blackouts in recent years driven by wildfires and extreme heat, in addition to storms.[3]

The most used reliability metrics, such as the System Average Interruption Frequency Index (SAIFI), System Average Interruption Duration Index (SAIDI), and Momentary Average Interruption Frequency Index (MAIFI), emerged more than 50 years ago. The world has changed since then. Digital dependence has increased expectations of reliability from electric distribution grids, while changes in how electricity is generated and used have created opportunities for customers to adopt non-grid means to improve their own reliability and resiliency, though, absent public subsidies, these measures are generally out-of-reach of low- or even middle-income households and small businesses.[4]

There can be a disconnect between average systemwide performance metrics, as reflected in geographically muddled SAIFI, SAIDI, and MAIFI, and what's experienced by individual customers or specific areas. Investments and incentives based solely on broad system measures may encourage utilities to focus on generally improving reliability rather than addressing the needs of the worst-served customers, who may be located at the grid edge or in areas that suffer greater disruptions for historical or other reasons.

LGs and other stakeholders would benefit from understanding how the IOUs use outage information to guide their distribution-level expenditures. Likewise, without a transparent

[3] Weather-related Power Outages Rising | Climate Central

[4] The CPUC has not adopted a standard definition for reliability or resiliency. Reliability should be considered as seamless delivery of electricity at proper voltage levels, deviations from which should be measured from a diverse set of customer perspectives, to identify the frequency, locations, customer types, and time periods in which reliability is not achieved. Resilience should be defined as the ability to respond to electric service interruptions and power quality degradations with least consequences to life and livelihood (i.e., health, safety, financial, economic and social well-being). This can be similarly tracked by diverse geographic, customer and time variables. See also [resiliency-workshop-series-summary-reportfinal03132024.pdf](resiliency-workshop-series-summary-reportfinal03132024.pdf).

understanding of the value different customers place on reliability, and their resiliency to disruptions, regulatory, utility, LG, and customer self-care interventions may miss the mark.

1. What enhancements and/or updates should the Commission request for utility reporting requirements and data submissions in the following areas: electric outages, circuit information, and extreme events?

Optimally, LGs would have access to well-presented GIS data at the circuit level that maps historical and forecasted reliability disruptions, including related to power quality; historical and planned utility investment to reduce disturbances; and customer class characteristics. The causes of interruptions – unplanned, related to a weather event, distribution failure, or other incident; or planned, related to a Public Safety Power Shutoff (PSPS) – should be identified.

This "reliability map" should be overlayed with economic and demographic information, including customers by rate class; California Alternate Rates for Energy (CARE) and Family Electric Rate Assistance Program (FERA) populations; household income; and indicators of environmental burdens. The reliability and vulnerability data should be further supplemented by indicators of resiliency, such as locations of resiliency facilities; DER populations and characteristics, particularly related to backup generators (BUGs)[5] and storage, as well as electric vehicle (EV) charging equipment.[6]

This information, well prepared and presented, would enable LGs, CCAs, and Regional Energy Networks (RENs) to identify areas of particularly poor reliability, and collaborate with the serving IOU to help reduce disruptions and/or bolster resiliency. Likewise, it would help

[5] These data can be acquired from the relevant air district.

[6] A barebones resiliency tactic might consist of a publicly available solar-powered EV charging node, which could also be used to recharge cell phones and the like. In particularly remote, low-income, areas, small-scale solar and batteries could be distributed capable of providing sufficient power to maintaining digital devices and a modest amount of heating, lighting, or refrigeration.

regulators right-size geographic-specific investments in reliability and resiliency, to better conform with affordability, equity, and climate goals.

In this context, in addition to circuit level SAIFI, SAIDI, and MAIFI data, investor-owned utilities IOUs should provide the following:

- Customers Experiencing Multiple Interruptions (CEMI) and Customers Experiencing Multiple Sustained and Momentary Interruptions (CEMSMI) by circuit. This metric covers the number of customers subject to more than a defined number of interruptions a year, including both momentary and sustained outages.
- Population of CARE, FERA, and Medical Baseline customers by circuit;
- Investments made related to distribution capacity and other services associated with impacted circuits, over the previous 15 years, further classified by customer class;
- Planned investments related to distribution capacity associated with impacted circuits and associated customer class, including descriptions of the reliability measures considered, their cost-effectiveness, and which were selected. This and the above information are needed to understand the role reliability plays in utility planning and investment, as a means to manage how associated revenues are allocated by class and identify areas that might merit different approaches, including by non-utility stakeholders;
- For Public Safety Power Shutoffs, incidence and duration of service disruptions by circuit, and similar historical and planned investments as the above two bullets, as well as associated estimates of expected future chances in PSPS frequency and duration.

- Wildfire vegetation management expenditures, by census tract or smallest geographic designation available, for previous 15 years and planned for next 15 years. This information, overlain with PSPS and unplanned outage data, would enable LGs and others to examine the relationship between vegetation management and PSPS events, and coordinate related LG and utility activities to minimize wildfire risks and increase resiliency.

2. What thresholds or revisions to thresholds, if any, should be established to define reasonable reliability performance given weather conditions? For example, according to General Order 166, restoration time is presumed reasonable during a major outage if the event's Customer Average Interruption Index (CAIDI) is below 570 minutes.

Incidences of extreme weather historically have been infrequent. For example, traditional resource adequacy models and approaches are rooted in a loss of load expectation criterion of 1-day-in-10 years, focused on peak hour conditions. The present challenge is growing outage risks, over all hours, arising from increased variability and uncertainty caused by difficult-to-predict extreme weather.[7]

GO 166 defines transmission facilities, but does not mention distribution, which is the primary grid level at which customers experience outages. For example, in Pacific Gas and Electric Company's (PG&E) service territory, between 2014 and 2023 distribution outages increased by 43 percent as measured by CAIDI.[8] In addition to the significance of distribution outages, there is elevated access to distributed energy resources, which can act to reweight the focus to distribution level service and away from transmission-conveyed power. Extreme weather is more likely to cause lingering and widespread outages in areas that are more reliant on

[7] Historic storm breaks 1,000-year rainfall record in parts of Bay Area.
[8] 2023 Annual Electric Reliability Report (Per Decision 16-01-008)

long distance energy transfers from other places, while geographies that have access to dispersed distributed generation have a higher chance of fewer energy users being affected, as a result of the portfolio effect.

Understanding what thresholds to apply to a grid that may be slowly decentralizing, with growing non-grid assets that contribute to reliability and resiliency, requires not just modifications in CAIDI duration but thresholds that are based on the number, geography, and resiliency of impacted customers. Said differently, the averages embedded in CAIDI may mask important distinctions in outage lengths, populations effected, and outcome severity. For example, a facility that has access to a one-megawatt diesel generator may be able to self-generate for days or even weeks, depending on the size of its fuel tank and the load it's carrying. Residences and businesses outfitted with solar plus storage may also have an ability to better survive a grid outage. Those without these assets – much more likely to be low-income or small enterprises – are considerably more vulnerable.

A "major outage," as experienced by an individual customer, is likely to be defined by the resulting disruption to their lives or business. Some energy users – hospitals, incarceration facilities, emergency response operators, potable and wastewater service facilities – cannot tolerate more than a few minutes of an outage, though they are likely to have access to backup power. Others, such as a restaurant, might have a reliability threshold that lasts as long as food remains properly refrigerated, with even less tolerance for unpowered lighting and phone service during peak business hours.[9,10] While it may not be cost-effective to grid-improve reliability for a single restaurant, it could be more so in a concentrated commercial district, with DER-deployed for more remote situations.

There is no one-size-fits-all threshold. Developing the information discussed in the response to Question 1 is an essential step to define geographic- and customer-specific reliability tolerances and associated prudent grid or DER investments. In this respect, the Commission should investigate deploying methods to analytically measure the "value of service" (VoS) different customer classes place on energy reliability; how much energy users are willing to pay to avoid power outages or voltage sags, which could also be evaluated through “revealed preferences,” the amount different types of customers actually spend to safeguard reliability. This assessment, along with the base information previously discussed, should be a key factor considered when planning and investing in energy infrastructure and DER improvements to maintain reliable power delivery.[11]

GO 166 should be revisited beyond threshold issues. For example, GO 166 Standard 13, created by Decision 00-05-022, established a “Call Center Benchmark for A Measured Event,” and states that the Commission should review utility call center performance by benchmarking the percent of calls the center receives when there is an outage that are not answered due to “busies” (i.e., the call receiving a busy signal). Standard 13 was added in 2000 based on a record

[9] California Public Utilities Code Section 451 articulates energy utilities’ “obligation to serve” their customers, requiring that they “furnish and maintain . . . adequate, efficient, just, and reasonable service” for ratepayers in their service territories. Under status quo conditions, different customers receive distinct reliability levels, with varied tolerances and harms caused by outages, and customer classes are allocated tailored revenue responsibilities. Likewise, energy users add at their own expense methods to manage their perceived reliability risks. While service needs to be “adequate” it is reasonable to manage a diversity of reliability levels and associated grid, DER, and resiliency levels, and to allocate class-specific revenue responsibility accordingly.

[10] Also important is the role enterprises might play in bolstering community resiliency. For example, a local eatery might be the place of refugee during outages, where residents can access food, refrigeration, and recharging.

[11] Estimated Value of Service Reliability for Electric Utility Customers in the United States | Energy Markets & Policy; True cost of electric service: What reliability metrics alone fail to communicate - ScienceDirect

developed in 1999. Communication technologies have changed over the past 25 years. Busy signals are now rare. Standard 13, the benchmark for a utility's responsiveness to customers during an outage, should be updated to reflect current technologies, including texting.

3. What data, data sets, and reporting requirements could aid the Commission in increasing the prioritization of equity for purposes of outage reporting? Examples of equity indices/data include but are not limited to: income, rent/mortgage, Medical Baseline Program customer or vulnerable customers who rely on electricity to operate life-support equipment, tools such as CalEnviroScreen, Healthy Places Index or Climate & Economic Justice Screening Tool, or others as needed.

It is important to understand outage characteristics as visited on specific geographies and customer classes, historical and planned utility investments to improve reliability, and the availability of DER and resiliency assets. As noted in *Resilience Workshop Series Summary Report*, populations, social capacity, resiliency facilities, and services are not distributed evenly across utility service territories. Areas with lower underlying capacity and less service availability experience greater increases in social burden in response to outages, even if they are located further away from the disruptions. Social burden is a key input to Resilience Node Cluster Analysis Tool (ReNCAT) analysis, which can be used as a basis to identify load shedding, microgrid formation, line hardening, and other investments to reduce social burden at least cost.[12]

This information, including as outlined in the response to Question 1, should be proactively provided to LGs, tailored to their jurisdiction. Doing so would enable LGs to incorporate grid reliability characteristics into resiliency planning.

LGSEC supports application of CalEnviroScreen, Healthy Places Index and the Climate & Economic Justice Screening Tool to help illuminate the geographies of equity. In addition, as

[12] Resiliency Workshop Series Summary Report.FINAL.03.13.2024 (1).pdf

suggested in the *Summary Report*, the Social Burden Index (SBI) and ReNCAT are available to assess energy justice, equity, affordability, and accessibility to services to meet the basic needs of those impacted by large scale electric power disruptions. Energy is used as an enabler of services; the ReNCAT tool relies on data that reflect the function of services in a geographical area that meets people's fundamental needs during power disruptions.[13]

4. What additional data should be shared with customers before, during, and after outages above what's currently available through customer outage portals and other customer outage communication channels? Please respond for outages for planned and unplanned events and for "blue-sky" days and specific reliability events such as Public Safety Power Shutdowns (PSPS), and outages associated with Fast Trip setting-related outages (also known as Enhanced Powerline Safety Settings, Fast Curve, and Sensitive Relay Profile), Major Event Days, etc.

LGSEC's response to the first question largely covers this query. LGs need to be able to understand historical and potential future outage trends by location, preferably at the circuit level. They also require knowledge of utility plans to invest in improving reliability, and alternatives to grid expenditures that are being considered. This should include identification of specific strategies being deployed or contemplated to reduce the need for PSPS and Fast Trip setting-related outages, and their associated costs and cost-effectiveness.

Those impacted by outages need to know how to access local resiliency resources, including resiliency centers, or at least places where phones, vehicles, and other devices can be charged.

The utilities should continually improve their tools to most effectively convey information to their customers, including providing tailored information to LGs.[14] It is also important to note that web-based tools themselves are vulnerable to outages. Basic information should also be texted

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[13] Ibid.

[14] See for example, Distribution System Reliability Metrics, which offers an evocative outage interface.

5. What data and reporting requirements identify impacts on environmental and social justice communities, including the extent to which data definitions for outage reporting impact achievement of any of the Commission's Environmental and Social Justice Action Plan's nine goals?

As previously discussed, averages can mask geographically- and demographically specific reliability and resiliency characteristics and impacts. Likewise, identifying customer characteristics and resiliency measures that are locally available would help inform and understanding of associated impacts.

Achievement of Environmental and Social Justice Action Plan Goal 2, Increase investment in clean energy resources to benefit ESJ communities, especially to improve local air quality and public health, would be advanced by examining the location-specific relationship between outages and use of fossil fuel BUGs, and identifying pathways to replace BUGs with clean resources as a resiliency measure, and/or cost-effectively improve reliability. Attainment of Goal 3, Strive to improve access to high-quality water, communications, and transportation services for ESJ communities, could be promoted by ongoing examination of the coincidence between reliability levels and electric vehicle charging facilities. Goal 4, Increase climate resiliency in ESJ communities, is at the heart of producing data that enables the Commission and stakeholders to adequately examine the geographic-specific relationship between reliability and availability of resiliency assets.

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