RESPONSE OF SAN DIEGO GAS & ELECTRIC COMPANY (U 902 E) TO ADMINISTRATIVE LAW JUDGE’S RULING ON POTENTIAL MICROGRID AND RESILIENCY SOLUTIONS FOR COMMISSION RELIABILITY ACTION TO ADDRESS GOVERNOR NEWSOM’S JULY 30, 2021, PROCLAMATION OF A STATE OF EMERGENCY

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September 10, 2021
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I. SDG&E PROPOSAL FOR UTILITY-OWNED CLEAN ENERGY SUBSTATION MICROGRID PROJECTS FOR CONSIDERATION WITHIN THE EXPEDITED PHASE 1 DECISION IN TRACK 4 OF THIS PROCEEDING

As a threshold matter, it is important to distinguish between reliability – the basis for the ruling – and resiliency – the focus of this instant proceeding.

“Reliability” refers to the normal, routine operation of the grid, and risks include routine outages (e.g., equipment failure, a car hitting a pole, etc.), natural events and disasters, and system capacity shortfalls. “Resiliency” is the capability to adapt to reliability events on a very
local basis. Only in exceptional circumstances will a microgrid be appropriate for a reliability problem. SDG&E’s Borrego Springs microgrid is a rare example of a microgrid that primarily addresses a reliability problem. Load in the Borrego Springs area is connected to the larger grid by a single transmission line with no viable means to provide a second tie to the larger grid.

“Resiliency” refers to the prevention of damage, rapid recovery after an extreme event, and survivability – the ability to maintain some basic level of electrical functionality to individual consumers or communities in the event of a complete loss of electrical service from the distribution system. A microgrid is one tool in the toolbox to address resiliency concerns, among solutions like undergrounding, system hardening, and vegetation management.

Thus, within the context of the ruling, energy resources providing system capacity will provide the desired reliability benefits; microgrid islanding capabilities provide resiliency benefits but are very limited in their ability to provide benefits to the larger grid. In response to the ruling, SDG&E offers a microgrid proposal for energy storage projects at SDG&E substations that can provide both reliability and resiliency benefits to the grid.

SDG&E proposes below two circuit-level energy storage microgrid projects and two additional projects that may be feasible. Through these two, and potentially four, project proposals, SDG&E can leverage project development to assist California’s grid for 2023 and 2024 by providing resiliency services to critical and priority public sector customers in SDG&E’s service territory as well as adding a modest amount of system capacity to the grid during blue-sky conditions. The time required to develop and construct these proposed clean energy storage microgrid projects make a 2022 online date infeasible. Instead, SDG&E proposes a phased approached to its two, and potentially four, circuit-level energy storage microgrid projects with two projects being developed for a 2023 in-service date and the potential for two
more projects being developed for a 2024 in-service date. Each of the proposed projects would be 10 MW with four-hour duration batteries, for a total of 40 megawatt-hours (“MWh”) of capacity.¹

**Proposed Project 1 at Boulevard Substation:** The first project that SDG&E recommends is an energy storage microgrid located at SDG&E’s Boulevard substation. Boulevard is a rural desert community located along the Mexican border near the southeastern edge of San Diego County and is a designated low-income community. SDG&E uses the AB 1550 definition of low-income.²

The Boulevard facility will be able to island preselected load including the County Sheriff’s Department, San Diego County Fire Station 47, Boulevard Border Patrol Station, Campo Reservation Fire Station and CAL Fire White Star. During a system disturbance these critical loads would have energy resiliency and system capacity would be available during blue-sky conditions. There are 600 kilowatts (“kW”) of renewables already installed on the distribution circuit feeding into the circuit–level microgrid. The energy storage system will be able to absorb and store excess solar generation and provide that energy back to the grid when needed.³ The Boulevard energy storage microgrid has a proposed on-line date in the second half of 2023.

**Proposed Project 2 at Paradise Substation:** The second project SDG&E recommends building as an energy storage microgrid would be located at SDG&E owned property at the

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¹ The two projects were originally part of SDG&E proposal in A.18-02-016. D.19-06-032, in effect, denied the application for these projects without prejudice.


³ A.18-02-016, Direct Testimony of Steven Prsha on behalf of SDG&E (February 28, 2018) at SP-11.
Paradise substation located in Skyline, San Diego, California. Skyline is a hilly neighborhood in southeastern San Diego and is designated a low-income community. The Paradise facility will have the capability to island critical pre-determined load including Fire Station 51, Southeast Division Police department, and Fire Station 32. There are 1,500 kW of renewables already installed on the distribution circuit feeding into the circuit-level microgrid. The energy storage system will be able to absorb and store excess solar generation and provide that energy back to the grid when needed. The Paradise energy storage microgrid will have a proposed on-line date in the second half of 2023.

**Possible Projects 3 and 4 for 2024:** SDG&E has identified two more potential projects that could serve summer reliability needs in 2024. These projects require more development and therefore have longer lead times. As such, SDG&E only briefly references these 2024 proposals. The two additional sites that SDG&E has identified for a 2024 in-service date are the Clairemont and Elliot circuit energy storage microgrids, which would be located at SDG&E owned property.

While SDG&E has proposed these circuit-level energy storage microgrids before, it must update its cost proposal before formally submitting these projects. SDG&E proposes to pursue these two microgrid projects through a full request for proposal using a currently ongoing competitive solicitation process for 2023 through 2026. Additionally, SDG&E proposes to track and seek recovery for any costs incurred to pursue these projects using the Clean Substation Microgrid Program subaccount authorized in SDG&E’s Microgrid one-way balancing account pursuant to D.21-01-018, ordering paragraph 16 at 120.4

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4 SDG&E did not seek Commission approval via a Tier 1 Advice Letter requesting this subaccount previously, since SDG&E was not previously pursuing clean substation microgrid projects. However, if the Commission authorizes the energy storage microgrids proposed herein, SDG&E would file that Tier 1 advice letter to begin tracking costs associated with this proposal.
II. COMMENTS IN RESPONSE TO RULING’S QUESTIONS

Prevention vs. Mitigation of System Capacity Shortfall

1. Is the proposal intended to help prevent a system capacity shortfall from occurring, or does it help mitigate the impact of rotating outages, should they be needed? Specify how.

The proposed energy storage resources at Boulevard and Paradise substations are intended to add system capacity during normal grid conditions. However, in the event of a system disturbance or grid outage, the resources will form a microgrid to provide energy resiliency to customers within the microgrid boundary.

2. How does the proposal address the potential conflict between making resources available to the system to help prevent a system capacity shortfall from occurring and reserving resources for private use to mitigate the impacts of a potential outage?

The energy storage microgrid proposal resources will be interconnected to the distribution system and therefore are available to provide grid services. Additionally, these resources are intended to be available for least-cost dispatch during normal conditions in the California Independent System Operator (“CAISO”) market. The revenue received from CAISO market participation would offset some ratepayer costs. As such, the resources would not be for private use. If the resources are needed during a system disturbance to serve these critical facilities as a microgrid, the generation output meter will still measure the energy provided and receive CAISO revenues through the market settlement process.

3. If a proposal is intended to prevent system capacity shortfall from occurring and it includes customer-owned or customer-hosted resources, how will availability of those resources to prevent capacity shortfall be guaranteed? Specify how they will be measured and how safety will be ensured.

This is not applicable to SDG&E’s proposal.
Islanding

1. Is islanding, separate from any associated reduction in load or increase in generation, essential to the ability of the proposal to address the system capacity shortfall? If so, please describe in detail how islanding is expected to directly help.

For microgrids comprised of resources that can operate in parallel with the distribution grid, the islanding function itself would not aid in system capacity shortfalls. Rather, when operating in parallel with the grid, these resources can be dispatched in a manner to alleviate capacity shortfalls using a controller (whether an individual plant controller or the microgrid controller). Depending on the resources, this could take the form of both demand reduction and generation output. For example, any local demand reduction-related resources could be signaled by the microgrid controller to provide demand reduction. A similar function could be in place to time the discharge of energy storage and output of conventional generation in a grid-supportive manner. Notably, while the islanding function itself does not address overall resource supply issues, any resources added as part of a new microgrid do contribute incremental generation capacity to the electric system.

A separate case exists for those behind-the-meter (“BTM”) resources that provide emergency or backup generation that cannot otherwise operate in parallel with the grid. In this case, the islanding function does provide indirect benefits, since customers would be supported by their own BTM resources, disconnected from the larger grid, and therefore reducing their demand on the grid. This solution, however, would tend to have fewer overall benefits, as the full value of these resources cannot serve the larger energy grid due to the inability to operate in parallel with the grid.
2. Does islanding indirectly supplement or enhance the ability of other resources like storage, generation, or demand response to help prevent a system capacity shortfall from occurring? If so, please describe in detail how islanding is expected to indirectly help. In the response, identify what types of generation or load reduction resources the microgrid would support.

Depending on the loads and resources that are inside of the islanding boundary, it is possible islanding could indirectly help if there is a sophisticated energy management system that has the ability to reduce load based on the resources available. The energy management system may be able to reduce the overall load where if otherwise operated in parallel, and not in islanding mode, the overall load would be higher. However, it is more likely that islanding negatively impacts generation capacity available to the system. Typically, resources within a microgrid are oversized for the energy needs of the customers to meet maximum peak demand and in-rush power (e.g., instantaneous power needs when a dishwasher starts, or an air conditioner kicks on). If those resources are now islanded from the rest of the system, any excess energy they may have is no longer available for the larger system because it has been islanded from the grid.

While SDG&E’s proposal for energy storage microgrids includes islanding capability, it would only island during an outage event that is directly impacting the distribution circuit on which the resource is located. This would maintain energy resiliency for the customers within the microgrid boundary. During all other times (i.e., blue-sky conditions), the energy storage resources could provide energy and capacity to the grid, thereby preventing a system capacity shortfall.
Leveraging Existing Microgrid & Resiliency Programs

1. How should microgrid projects that participate in the suspension of the capacity reservation component of the standby charge, pursuant to Decision 21-07-011, be required to help address a system capacity shortfall, particularly during the net peak hours?

Subsidized resources by state or ratepayer funds should be required to provide energy back to the grid during emergency events. Waiving standby charges is not appropriate. Compensation for these resources should be commensurate with the value provided.

2. How should existing programs like the Make Ready and Temporary Generation program be leveraged to address a system shortfall, particularly in the net peak hours?

SDG&E has previously leveraged temporary generation during Public Safety Power Shutoff (‘PSPS’) events to provide energy to the grid in emergency situations. These resources can continue to be leveraged as needed. SDG&E has not contemplated keeping these generators in place for purposes beyond the need for resiliency during PSPS, but these resources can continue to be leveraged to support the overall grid.

3. How should existing microgrids that have been awarded grant funds (e.g., projects awarded funding by the California Energy Commission or investor-owned utilities via EPIC) be further leveraged to reduce load, especially during net peak hours?

All resources that have been subsidized by taxpayers and ratepayers should be used to provide value to the grid by reducing load or increasing generation in net peak hours. For example, SDG&E’s Borrego Springs microgrid, which received California Energy Commission funds through the Electric Program Investment Charge program, does provide energy to the grid in blue-sky conditions.

4. Approximately how many megawatts could existing programs address during the net peak hours in 2022? Please provide estimates per program.

This question does not apply to SDG&E’s proposal.
Modifications to Existing Microgrid Tariffs

1. Which specific existing tariffs should be modified, or further modified, to enable microgrids to address a system capacity shortfall during net peak hours (e.g., the behind-the-meter microgrid tariffs)?

   a. Provide an overview of how the tariffs should be modified.
   
   b. Describe the outcome that the tariff change is intended to achieve (e.g., accelerate deployment of new microgrids or enhance system benefits of existing microgrids) and an estimate of the megawatt potential, if possible.
   
   c. Describe how that outcome can help address a system capacity shortfall (e.g., by making additional generation or reducing load during net peak hours, or by reducing the impact of rotating outages) and how the availability of those resources will be ensured.
   
   d. Approximately how many MW could the changes address during the net peak hours in 2022?
   
   e. Name the existing tariffs by identifying the rate schedule, rule, contract, or other document, or combination of documents, that should be modified.
   
   f. Describe the specific changes to the document that should be made to achieve the desired outcome.

No tariff modifications are needed with SDG&E’s proposal.

Potential New Microgrid Programs and Projects

1. What new microgrid projects, programs, or measures should be developed to address a system capacity shortfall, particularly in the net peak hours?

   As described in Section I. above, SDG&E proposes energy storage microgrids at Boulevard and Paradise substations for 2023, and two potential energy storage microgrid projects at SDG&E’s substations for 2024.

   a. How would the program help address a system capacity shortfall?

   SDG&E’s energy storage microgrids at two substations in its service territory would be available to each to add 10 MW/40 MWh for a total of 20 MW/80 MWh during blue-sky conditions to address system capacity shortfalls in 2023 and beyond.
b. What is the target resource, customer, and/or market participants?

SDG&E proposes to leverage substation level energy storage at SDG&E-owned property to serve critical customers in both the Boulevard and Skyline communities in San Diego County. Both sites are located within a designated low-income area.

c. How should an administrator for the program be chosen?

SDG&E’s proposals for energy storage microgrid projects would be utility-owned and therefore operated by SDG&E. SDG&E would utilize bids from an on-going competitive solicitation for 2023 through 2026 in-service years to select the project developer(s).

d. Is it feasible to develop, launch, and operate the program in such a way that it can address net peak hours by the summer of 2022? If not, what timeline could the program be launched?

No, SDG&E would need until at least the second half of 2023 for its two microgrid proposals to be online and providing capacity to the system.

e. Approximately how many megawatts could the program address during the net peak hours in 2022?

Neither project can provide capacity in 2022. However, for 2023, each proposal could provide 10 MW/40 MWh for a total of 20 MW/80 MWh with the addition of two more locations, online in 2024.

III. CONCLUSION

SDG&E requests that the Commission accept these comments.

Respectfully submitted,

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