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PG&E Comments on Workshop on Summer and Midterm Reliability

Additional submitted attachment is included below.

Pacific Gas and Electric Company

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California Energy Commission
Energy Assessment Division, Energy System Reliability
Docket Number 21-ESR-01
517 P Street
Sacramento, CA 95814

Re: Pacific Gas and Electric Company's Comments on Staff Workshop on Summer and Midterm Reliability (Docket Number 21-ESR-01)

Pacific Gas and Electric Company (PG&E) appreciates the work being undertaken by the California Energy Commission (CEC), the California Public Utilities Commission (CPUC), and other parties in support of reliability and the CEC's efforts on the Summer 2022 and Midterm reliability analysis. This work provides important situational awareness on the potential impact to the electric grid under an extreme weather event scenario.

PG&E also appreciates the invitation to participate during the afternoon session to discuss interconnection issues and advancements and provides the attachment to this letter with the points presented during the afternoon panel discussion.

PG&E is Open to All Options to Support Reliability and Collaboration with Stakeholders

PG&E appreciates efforts by all parties at the CEC's staff workshop held on May 20, 2022, to describe the complex suite of reliability analysis, planning, and procurement efforts currently underway. These efforts involve multiple state agencies, including the CPUC and the CEC, the California Independent System Operator Corporation (CAISO), the investor-owned utilities (IOUs), and other parties working collaboratively to reduce risks to electric-system reliability. PG&E supports the sentiment expressed by parties that addressing reliability concerns will require proactive and creative collaboration between parties and consideration of all options, consistent with state policy, to ensure continued safe, reliable and clean energy delivery to all Californians. Thus far, PG&E has completed a significant volume of procurement in response to CPUC-driven procurement orders, remains committed to these reliability efforts, and will continue to pursue creative solutions to address reliability.

Reliability Must Be Balanced with Customer Affordability

While PG&E remains dogged in its efforts to support electric system reliability, the company believes that these efforts should carefully consider all the financial costs. Of note, the recently released May revised state budget proposal includes almost $4.5 billion for a strategic electricity reliability reserve. This proposal seeks to strengthen California's reliability infrastructure while utilizing state funds rather than utility revenues. The inclusion of this proposal demonstrates that affordability is and should continue to be a state policy priority considered in parallel with reliability. Parties should continue to explore proposals to enhance reliability that prioritize affordability and seek to equitably allocate costs to all benefitting residents of California.

PG&E notes that analyses presented by the CEC and the CAISO demonstrate the potential need for contingency resources during some hours and under some conditions. In particular, the CEC analysis shows potential resource shortfalls under the more extreme 22.5 percent planning reserve margin (PRM). Similarly, the CAISO utilizes a conservative set of assumptions to argue for 1,800 megawatts of additional procurement by 2025. This amount would supplement the 11,500 megawatts of procurement already ordered by the CPUC in the Integrated Resource Planning (IRP) proceeding. While these analyses are valuable for assessing the future of reliability, PG&E urges caution when considering whether the conclusions offered justify additional procurement orders if it also causes costs to become excessive.

PG&E supports the policy demonstrated in the Governor's May revised state budget and believes any additional IOU emergency procurement should be borne by the State's General Fund. Given how critical affordability is to achieving the State's goals on transportation and building electrification to combat climate change, PG&E strongly urges all parties to balance affordability with reliability.

PG&E appreciates the opportunity to comment on the CEC's updated outlook for Summer 2022 and Midterm reliability and looks forward to working with the CEC and other state agencies. Please reach out to me with any questions.

Sincerely,

Licha Lopez

Note Attachment Below

ATTACHMENT

PG&E Presentation, Panel 2
Interconnection Issues and Advancements
CEC's Staff Workshop on Summer and Midterm Reliability
May 20, 2022

PG&E Presentation, Panel 2 – Interconnection Issues and Advancements

Background

1- PG&E has the largest share of projects in the CAISO queue totaling 294 projects at approximately 65,000 megawatts (MW). 112 projects connecting 18,000 MW have completed their cluster studies and are either in the large generator interconnection agreement (LGIA) negotiation, execution, or implementation. The most recent Cluster 14 alone is adding 182 projects totaling 48,000 MW.

2- Interconnection of such large amounts of generation has triggered significant upgrades to PG&E's transmission system. Over the next five years, network upgrades including new switching stations, bus conversions and bus expansions will be needed to interconnect the generators to the transmission grid. Interconnecting substantial amounts of generation will also require upgrades to mitigate overstressed breakers, bus sections, transmission banks and lines.

3- Proactive identification and construction of transmission upgrades will be needed to support integration of queued generation projects. The interconnection agreement (IA) execution and generation customer financial postings are key for project funding, initiation, and implementation to meet customers in-service date (ISD).

PG&E has taken the following steps to improve the interconnection process

1- Staffing Increase: Electric Generation Interconnection work requires highly skilled resources (for example planning, protection, substation, transmission-line and automation and construction engineers). Finding such highly skilled resources is an industry--wide concern. PG&E continually monitors, evaluates, and addresses the staffing and resources to meet the needs of the existing and future generators in the interconnection portfolio. In 2021, PG&E created a substation and transmission line engineering group specifically for generator interconnections.

2- Process and Procedure Updates: To ensure that PG&E can manage the interconnection queue efficiently and expeditiously; PG&E is undergoing an extensive review of its policies and procedures related to these interconnection projects.

3- 500 kilovolts (kV) Circuit Breakers (CB) Upgrades: In recent cluster studies, PG&E identified fault interrupting concerns on some of the 500 kV transmission circuit breakers. To mitigate these concerns, PG&E identified a solution to increase the interrupting capability of the overstressed 500 kV breakers instead of completing full breaker replacements. This greatly reduced the schedule impact to our generation of interconnection customers. PG&E will continue to evaluate opportunities to support the timely interconnection of generation customers.

4- Transmission Development Forum (TDF): Through the CAISO and CPUC hosted Transmission Development Forum, PG&E has provided status updates on key transmission planning and generation interconnection projects. This forum helps address stakeholder questions and requests related to the development of PG&E's grid and network upgrades to enable generation interconnections.

Challenges of project interconnection

PG&E could characterize at a high-level several key areas where PG&E sees challenges to bringing new generation interconnection projects online. Primarily these areas include complexities due to permitting, land acquisitions, material lead times, and the sequencing of work at a particular substation or on a particular transmission line. Timelines vary significantly but typical increase proportionately as projects complexity increases.

1- **Complexity of Interconnection Work Execution:** PG&E has the largest volume of new interconnection projects triggering not only interconnection upgrades but also various reliability and deliverability upgrades. The volume of projects is so significant that it can cause overlaps and sequencing issues in any given service area. This leads to complex sequencing efforts to ensure the work required is performed safely to upgrade the grid in support of interconnection projects. The trend toward significant blending of projects from different clusters have created unpredictability in the execution strategy. In an ideal generation queue sequence, PG&E would be executing one cluster at a time allowing for efficiency and greater stability of work plans. At present, the reality is that many older clusters remain in-flight when that work should have already been completed prior to more recent clusters. As a result of this, it is also very common to see network upgrades scopes and costs change when older cluster projects delay. As a utility, our goal is to complete network upgrades in a prioritized manner as efficiently as we can without impacting queue project dependencies.

2- **Interconnection Project Timelines:** Generation interconnection timelines typically follow two years for studies, three to five years for interconnection work and permission to operate (PTO) network upgrades. Meanwhile, deliverability upgrades can range from four to six years. Permitting and procurement processes typically run parallel to each other though initiating those process for PG&E comes after significant progress in the design process where clear scope and construction methods can be included into the application for a permit. For large network upgrades, PG&E tends to require land and environmental strategy processes where we as a utility develop the best plan forward before submitting applications. The implication of a Certificate of Public Convenience and Necessity (CPCN) or a Production Tax Credit (PTC) permit comes with approximately 18 to 24 months in additional project duration and significant cost impacts with the risk to greatly change the project plan. In addition to this, once PG&E finally gets into construction phase activities, smaller projects may only require one clearance season while more complex projects may span multiple clearance cycles to safely sequence work while mitigating grid impacts.

3- **Supply Chain Issues:** PG&E is closely monitoring the worldwide supply chain issues affecting equipment and raw materials presently delaying some planned work. We are also monitoring extended supplier production cycles due to their resource shortages and sourcing challenges. Raw materials in particular impact the construction of transmission bus infrastructure as well as tower reinforcement work and new steel pole manufacturing. Shortages of raw materials are also impacting PG&E in-house fabrication of assemblies associated with line work. In the face of all this, PG&E is working with our current equipment vendors to figure out when deliveries will arrive. Meanwhile, PG&E is looking to expand new equipment vendor relationships to help minimize the impacts on future interconnection project schedules.