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BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Modernize the Electric Grid for a High Distributed Energy Resources Future.	Rulemaking 21-06-017

PACIFIC GAS AND ELECTRIC COMPANY'S (U 39 E) OPENING COMMENTS ON THE ASSIGNED COMMISSIONER AND ADMINISTRATIVE LAW JUDGE'S RULING REQUESTING COMMENT ON ASSIGNED COMMISSIONER'S PROPOSAL ON FLEXIBLE SERVICE CONNECTIONS AND QUESTIONS IN SECTIONS 2 AND 4

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BEFORE THE PUBLIC UTILITIES COMMISSION
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Order Instituting Rulemaking to Modernize the Electric Grid for a High Distributed Energy Resources Future.	Rulemaking 21-06-017

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Pursuant to the *Assigned Commissioner and Administrative Law Judge's Ruling Requesting Comment on Assigned Commissioner's Proposal on Flexible Service Connections* (Ruling), filed July 7, 2026, and Administrative Law Judge Regnier's July 10, 2026 emailed ruling granting schedule modifications, Pacific Gas and Electric Company (PG&E) provides its opening comments on the Assigned Commissioner's Proposal and responses to questions presented in Sections 2 and 4 of the Ruling.

I. PG&E'S RESPONSES TO QUESTIONS PRESENTED IN SECTION 2

1. Please provide feedback on the Proposal itself, identifying any concerns with and/or support for the direction and background. Comments on the Proposal shall be provided within the same structure as the Proposal where possible (e.g., discussion of Operating Envelopes should come in Section 4 of party comments).

PG&E is an industry leader in the use of flexibility to accelerate customer energizations[1/] and is generally supportive of the proposal's vision to use flexible service connections to provide customer capacity in a manner that increase the utilization of existing grid infrastructure and provides more affordable options that will benefit ratepayers.[2/] The state has made significant progress under AB 50 and SB 410 in accelerating customer energizations, and many aspects of the proposal would further this effort. To that end, PG&E generally supports the Proposal's

1/ For example, PG&E's Flex Connect, Load Limit offerings and Charge Boost Program.

2/ *Assigned Commissioner and Administrative Law Judge's Ruling Requesting Comment on Assigned Commissioner's Proposal on Flexible Service Connections* (Ruling), Attachment 2, *Assigned Commissioner's Proposal* (Proposal), p. 3 (July 2026).

recommendation regarding Bridging solutions that accelerate customer energizations. The customer needs to come first in designing these product offerings – with customer timelines, customer capacity and operational needs being the primary determinant of the solution.

However, PG&E has several critical, specific changes to the proposal that are necessary to avoid the unintended consequence of slowing down the provision of capacity for customers and risking delays in energization timelines:

- The Proposal should be modified to explicitly state that any of the requirements do not slow down the provision of capacity for customers.
- The Proposal should be modified to include a common set of affordability outcomes as the basis for consistent measurement, tracking, and reporting across all proposed solutions, as outlined in PG&E's response to Question 5.
- The Proposal's recommendation that evaluations of Flexible Service Connection options must proceed *before* proceeding with a distribution upgrade for a customer would delay customer energizations, and should be modified to ensure that capacity can be provided to customers in a timely manner while also adhering to the affordability outcomes mentioned above.
- Similarly, the Proposal's requirement to evaluate flexible connections as the *default* mitigation for distribution transformer and secondary conductor upgrades[3/] risks delaying customer energizations and would alter basic engineering approaches if one solution had to be favored over another, and should be modified to ensure that capacity can be provided to customers in a timely manner.
- The Proposal's recommendation to default customers onto a real-time pricing (RTP) rate should be removed and RTP should instead be presented as an option to the customer for consideration. Treating RTP as the default rate for all flexible

3/ *Id*. at pp. 47, 49. PG&E further requests that the Proposal clarify what upgrade is being targeted with each solution, as at times it is unclear if the solution is intended to target primary versus secondary upgrades, for example.

connection customers is an unnecessarily broad approach that would effectively require customers to assume the pricing complexity and risk exposure of RTP for their entire load, regardless of whether they are a suitable fit for, or affirmatively willing and able to manage to, that rate structure. Customers should retain meaningful rate choice, and RTP enrollment should be an option for customers who can make an informed, affirmative election to participate.

- The Proposal should clarify that size thresholds should be established for each offering to reflect that many of the offerings are not applicable to all customers.[4/]
- The Proposal should prioritize bridging solutions and fails to recognize the differences between non-bridging and bridging options.[5/] Non-bridging solutions for distribution upgrades will face many of the same challenges as the Distribution Investment Deferral Framework (DIDF) – and further development will be needed, including how to ensure that they do not slow down future customer energizations, maintain operational flexibility and reliability, and reflect the dynamic and proactive nature of the planning process. Therefore, bridging options should be prioritized, followed by offering non-bridging options over a longer timeline to iteratively establish and explore the challenges of deferring or delaying capacity upgrades and to allow Track 2 of this proceeding to progress and inform the Tier 2 Non-Bridging Solutions Advice Letter (AL).
- Finally, PG&E cautions that many customers and communities may prefer a long-term wires solution that meets their growing capacity and operational needs over time versus opting in to constraining their load during capacity-constrained periods

4/ For example, FSC solutions are targeted to larger customers whereas Grid Edge DERMS solutions are targeted towards smaller residential customers.

5/ PG&E interprets the concepts of "bridging" and "non-bridging" as not applying to the Grid Edge DERMs solutions, given the fundamentally different approach to planning and use of these solutions, and instead these concepts apply specifically to the "Tier 2 FSC Implementation AL" and the "Tier 2 Non-Bridging Solutions AL."

indefinitely. For this reason, rapid scaling up of customer adoption of these offerings may be challenging to achieve without considering whether customer flexibility should be required and/or enabled in some manner. Implementing these product offerings will take significant investment of resources and ratepayer costs, and if customer interest is limited, or speculative cost savings not yet backed by data or evidence don't prove out, the potential affordability benefits may not be realized. PG&E therefore recommends that broader modifications to Service and Energization Rules will need to be considered beyond the limited recommendation regarding controlled load, and the implementation of non-bridging solutions should occur after a Track 2 Decision provides guidance of orchestration of this flexibility.

In summary, Flexible connections should remain a tool in the toolbox, not the default planning paradigm. The use of Flexible Connections should be targeted to specific customer classes, constraint types, and situations where they provide clear customer and ratepayer value, while preserving long-term system reliability, energization readiness, and operational flexibility.

2. Section 9 of the Proposal includes a summary of the recommendations for Commission action. Please provide feedback on the recommendations, being as specific as possible regarding the pros and cons of the proposed recommendations, and on the feasibility of implementation.

PG&E provides detailed comments on the Proposal itself, including on the specific recommendations, using the same structure as the Proposal,[6/] below. For a list of all of PG&E's recommended changes (language additions in underline and deletions in ~~strikethrough~~) to the Proposal's Recommendations, please see Appendix A.

- ***Section 3. Distribution Capacity Determination: Existing Infrastructure, Forecasting Practices, and Capacity Evaluation Methods***

6/ PG&E recommends that the Proposal be modified to explicitly separate out the components that apply to impacts on the Distribution as addressed by the Enterprise DERMS based Flexible Service Connections from those applying to impacts on the Residential Secondary Distribution as addressed by Grid Edge DERMS based solutions. For PG&E's responses in this document, our operating assumption is that only Section 4.4 and 4.5 refer to Grid Edge DERMS Residential Secondary Distribution topics, and that any other components related to Grid Edge DERMS Residential should be addressed via the proposed Tier 2 Grid Edge DERMS AL.

- ***Section 3, Recommendation 1:*** *Extension of Standard Offer to SDG&E customers*

PG&E's only comment is that D.26-02-025 did not direct SDG&E to establish this Standard Offer, and PG&E does not see evidence in the record of this proceeding to suggest that the reasoning of that decision has changed or needs revision.

- ***Section 3, Recommendation 2:*** *Large IOUs to record and provide values helpful to dedicated infrastructure customers independently implementing Operating Limits*

The proposal recommends a process by which customers can request service conductor capacity and demand load values[7/] that the IOUs record during the Engineering and Design energization step, provided within 30 days of the customer request.[8/] Creating and maintaining such a process will increase the costs of processing energizations, and delay the energization timelines if any energization step has to be delayed while this request, or customer response, is underway. Therefore, PG&E recommends that the request only be available to the extent a customer has expressed interest in a flexible service option (to reduce costs), and that all energization steps shall proceed regardless of the customer request. Additionally, the IOUs should have the option of filing to end this requirement if the costs of the process outweigh the ratepayer savings (*e.g.*, if customer interest in the data is limited).

Suggested redlines: Direct IOUs to ~~record and~~ provide values helpful to dedicated infrastructure customers independently implementing Operating Limits when requested during the energization process, while not delaying or halting any step in the energization process *timeline.* Implemented through the Tier 2 FSC Implementation AL. The IOUs are authorized to file a Tier 2 AL in this or successor proceedings to revisit this requirement if ratepayer costs are exceeding benefits.

7/ PG&E notes that the provision of nameplate capacity may not be an appropriate, or even a misleading, indication of capacity, and so the information provided to customers should be informed by engineering and based upon what is most relevant to the customer.

8/ Proposal at p. 45.

- ***Section 3, Recommendation 3****: Rule 2—Updating definition of Controlled Load and alignment language between Large IOUs*

The Proposal's recommendation specifically focuses on updating the definition regarding Power Control Systems (PCS) setpoints and demand magnitude but should instead allow for broader updates to Service and Energization Rules consistent with the aims of this proposal, including accounting for customer responsibilities.

Updates to the electric rules pertaining to service and energization need to consider that flexible service connections require consideration of just not one singular peak value and one singular asset, but rather the loading profile on multiple assets. Customer load shapes may evolve over time and notification or reevaluation may be necessary to account for material load-shape changes, regardless of whether the customer exceeds a particular approved setpoint. A customer would need to remain below the PCS setpoint without materially changing when the loading occurs, without creating new coincident peaks on shared upstream infrastructure or other issues. For example, a commercial customer with a midday peak and a commercial EV fleet with a late-evening peak may currently have complementary load shapes. If the midday customer shifts operations to evening hours without notifying PG&E, the aggregate load may overload upstream equipment even though the individual customer remains below its approved limit.

The customer's requested load may be different than the long-term Controlled, bona fide load that actually materializes. Further refinements of the electric Rules for service and customer energization therefore could include.

- Rule 2 Section H.7 to reflect how the PCS limit for controlled load is determined
- Rule 2 updates to Section D.3.a General Load Limitations to clarify that the Maximum Demand Load is the Maximum Allowed per Location/Premise. Also adds 34.5 kV as a Nominal Voltage.
- Rule 2 added language in Section D.3.c. to state that PG&E will evaluate customer load forecasts based on factors such as historical data, load type, and load profiles.
- Rule 2 Section I.3.a added language about using actual cost billing for high-cost Special Facilities

- Rule 2 Section I.4 addition of Applicant cost responsibility for nonstandard facilities installed to serve non Bona-fide Demand Load
- Rule 3 Section D definition of Established Site Capacity which is based on historic customer usage. Also adds timeframe for Applicant to reach application load level before Established Site Capacity is set.
- Rule 15 and 16 modifications to be determined and as needed to include customer responsibilities regarding the adoption of FSCs, the adherence to Operating Limits, and procedures for updates to the Operating Limits.

Essentially, the modifications to Service and Energization rules need to reflect the engineering, safety, and reliability implications of the product offerings. Therefore, rather than prematurely prescribing a specific, isolated change, the Tier 2 FSC Implementation AL and the Tier 2 Grid Edge DERMS AL are the appropriate venues to update the Service and Energization rules to enable the Proposal's objectives.

Suggested redlines: Direct IOUs to make modifications to ~~Electric Rule 2~~ the Service and Energization Rules (*e.g.*, Electric Rule 2, Rule 3, etc.) to update the definition of Controlled Load, clarify customer responsibilities, and add alignment language between the large IOUs. Implemented through the Tier 2 FSC Implementation AL and the Tier 2 Grid Edge DERMS AL within ~~120~~ 180 days of the Track 3 decision~~)~~.

- ***Section 3, Recommendation 4:*** *Flexible connection evaluation requirements*

The Proposal's recommendation that evaluations of Flexible Service Connection options must proceed *before* proceeding with a distribution upgrade for a customer could delay customer energizations and should be modified to ensure that capacity can be provided to customers in a timely manner.

The proposal recommends that *before* initiating a ratepayer-funded distribution upgrade, each IOU must evaluate whether a flexible connection solution can be used as a mitigation to safely satisfy the customer's requested capacity, additionally adding that the IOUs must

document and communicate to the customer *prior* to the IOU moving forward with engineering and design of the upgrade.[9/] Essentially, the Proposal recommends *delaying* the distribution upgrade so that it can first evaluate, document, and communicate to the customer a flexible connection solution, prioritizing an option the customer may note interested in pursuing while delaying a distribution upgrade needed for customer energizations. Furthermore, it will be critical to ensure such evaluations do not undo the progress being made in the High DER Proceeding to enable Proactive Planning for customer load growth.[10/] Therefore, the proposal should instead focus on accelerating customer energizations rather than risk conflicting with the progress being made in the Energization Proceeding, and should be modified so that the consideration of Flexible Service Connections should require that customer energizations are *not* delayed.

Additionally, the requirement to provide flexible connection options to customers should include a customer size threshold and screening criteria, to avoid unnecessary delay to customer energizations (*e.g.*, > 1 MW). Flexible connection evaluations should be performed where they provide value and where there is a realistic opportunity to defer or avoid an upgrade. Furthermore, some new loads may be too large relative to the constrained equipment to make a flexible option meaningful. Some constrained equipment may already have a flexible customer utilizing available capacity, limiting or eliminating the opportunity for additional flexible load. Establishing a customer size threshold would also align the Proposal with distribution planning, in which evaluations are driven by larger customer requests.

Regarding the deferral or delay of distribution upgrades, PG&E provides further comments on non-bridging options below.

Suggested redlines: Direct IOUs that ~~before a ratepayer funded distribution upgrade associated with a customer,~~ each IOU must evaluate, when requested by the customer, whether a

9/ *Id*. at p. 46.

10/ CPUC Resolution E-5413 (Dec. 18, 2025).

Limited Operating arrangement, Operating Envelope or other flexible connection mitigation enabled by PCS can safely satisfy the customer's requested capacity in lieu of a ratepayer funded distribution upgrade associated with that customer, to the extent the mitigation is feasible, does not delay customer energizations, and does not impact operational flexibility and reliability. Implemented through the Tier 2 FSC Implementation AL.

- ***Section 4. Operating Envelopes and Dynamic Capacity Management***

PG&E notes that at times the Proposal is unclear as to what facilities (*e.g.*, primary, secondary) the recommendations are addressing, and recommends the Proposal be modified to clearly state what facilities are being referenced.

  - ***Section 4, Recommendation 1:*** *Large IOUs to provide Limited Power arrangements as the default mitigation for distribution transformer upgrades*

Limited power arrangements quite simply should ***not*** be the ***default*** mitigation for distribution transformer or secondary conductor upgrades.[11/] Instead, it should be an option for the customer, not the default mitigation. Having such arrangements the default would risk delaying customer energizations across the state, would alter basic engineering approaches if one solution had to be favored over another, and in no way has been tested or piloted. Limited Power arrangements should be designed to ensure that capacity can be provided to customers in a timely manner. Conversely, by proposing load limited service as the default option for new customer interconnections, the Proposal risks creating a two-tier system of have and have nots among utility customers: existing customers with firm capacity and new customers with some or all of their capacity as non-firm.

Furthermore, the actual mitigation needs to be based on utility engineering. The default standard,[12/] comparable to the distribution transformer or secondary conductor, would require performance and applicability for which there is no evidence that a standard limited power

11/ *Id*. at p. 47.

12/ For example, would the limited power arrangement withstand 100 year events which translates to 99%+ performance, and be a viable solution for the vast majority of the target cases?

arrangement could perform to a default performance requirements. There are customers for which a limited power arrangement may make sense and others where it does not. Therefore using flexible service connections as a universal default mitigation is not supported. PG&E requests the Proposal simply strike the reference to default, but to the extent the Commission decides to keep this language, recommends that the IOUs define its meaning in the Tier 2 FSC Implementation AL.

Additionally, as described in response to non-bridging recommendations above (Section 3, Recommendation 1), delaying or deferring distribution upgrades poses significantly more challenges than bridging solutions that are designed to accelerate customer energization. To the extent a limited power arrangement would be the default risks delaying or deferring addressing the actual capacity issues of the broader grid and other customers. The capacity issues will persist for the next customer if capacity is not addressed for the long-term solution for the grid. Therefore, the limited power arrangement should serve as an option to potentially solve short term capacity issues where it is feasible for the customer, but it has not been proven as a long term, default means to solve the broader needs for capacity on the circuit or customers.

With regards to UL 3141, as previously stated in other responses,[13/] PG&E's stance is that UL 3141 has been published around power control systems, however it is still to be determined how applicable and affordable UL 3141 will turn out to be, particularly for smaller customers or customers who may need bespoke certifications for their particular systems or individual site designs. Because UL 3141 is certified at a system level and not equipment level, various setups using similar but not the same equipment may require their own certifications which can create significant additional costs for customers who do not have repeatable deployments. PG&E is excited about the capabilities of UL 3141 as a standard to simplify and streamline the integration of power control systems into the grid, however given the nascency of

13/ *See generally Pacific Gas and Electric Company's (U 39 E) Opening Comments on the Assigned Commissioner's and Administrative Law Judge's Ruling Seeking Additional Information from Parties, Setting Forth Further Direction, and Modifying Schedule for Track 3* (PG&E Comments on ACR re Track 3), pp 1-6 (Mar. 13, 2025).

the standard and solutions certified to it, limiting participation *only* to those devices is premature and risks limiting the proliferation of flexible service connections rather than enabling it. Therefore, flexibility, if mutually agreeable, is both warranted and appropriate at this time.

Finally, the scope of this recommendation is unclear, as the Proposal mentions distribution transformers, lateral primary upgrades, service transformers, and service line upgrades. The Proposal should clarify that this recommendation applies strictly to (typically larger) customers that are seeking energization directly to the lateral primary system that have triggered a distribution transformer upgrade on the primary system.

Suggested redlines: "Direct IOUs to provide Operating Limits as ~~the default~~ a mitigation option, where it will safely provide energization without slowing down customer energizations or impacting reliability, for distribution transformer upgrades, using certified UL 3141 devices or other means as approved by the IOU. Implemented through the Tier 2 FSC Implementation AL.

- ***Section 4, Recommendation 2:*** *SCE and SDG&E to implement Variable Operating Envelope bridging solutions modeled after PG&E's Flex Connect*

PG&E recommends clarifying the record to strike the words "at a low-cost" from page 47, which states "PG&E has shown, through its Flex Connect offering, that it is possible to implement a IEEE 2030.5 based solution~~, at a low-cost,~~ that provides bridging capacity to load customers and non-bridging capacity to generation customers at a higher service level than the existing Limited Generation Profiles offering."[14/] The referenced PG&E OpFlex Report specifically states, "the costs for customers to implement communications and control schemes are relatively expensive…."[15/]

14/ Proposal at p. 47.

15/ PG&E OpFlex Report, p 4.

- ***Section 4, Recommendation 3:*** *Leveraging Enterprise DERMS based Variable Operating Envelope infrastructure for centralized Dynamic Operating Envelopes to address abnormal grid conditions*

PG&E agrees with the Proposal's finding that additional research is needed and that the customer interest and cost versus benefits of developing these efforts is still not clear.[16/] Dynamic Operating Envelopes require near real-time communications, enhanced DERMS functionality, and rigorous operational oversight for planned work and emergencies, and may only be relevant for a limited customer population under limited conditions. Furthermore, utilization of other DERMS based Variable Operating Envelopes and existing utility operational tools may be a more practical method to manage these situations. Therefore, PG&E supports the recommendation to have the IOUs host a workshop and submit a workshop report as the next logical steps.

- ***Section 4, Recommendation 4:*** *SCE and SDG&E should implement Grid Edge DERMS for 100 A residential customers whose EV charging would normally require an upgrade.*

PG&E does not have comments regarding the recommendation for SCE and SDG&E to implement Grid Edge DERMS.

PG&E is generally supportive of the recommendation that PG&E file a Tier 2 Grid Edge DERMS AL to expand and scale Grid Edge DERMS for residential EV charging, but also notes that PG&E's progress to date still remains in pilot form and scaling is dependent on the outcome of PG&E's 2027-2030 GRC submittal. Therefore, the Tier 2 Grid Edge AL should propose a pathway to scale that includes stage-gates or other milestones that should be met as a means of derisking the approach while avoiding any slow down to progress on an at-scale pathway for adoption. Furthermore, given the pilot status of Grid Edge DERMS, the priority of scaling solutions that accelerate customer energizations, and the fact that PG&E's at-scale deployment of the Grid Edge DERMS "ChargeBoost" and "PanelBoost" solution is dependent upon AMI 2.0 capabilities as laid out in PG&E's 2027 to 2030 GRC Submittal, PG&E recommends a timeline of 180 days after the Decision as prudent.

16/ Proposal at p. 48.

Within the Tier 2 Grid Edge DERMS AL, PG&E would include the associated recommendations for broader adoption inclusive of, but not limited to:

- Set of common terminology related to Grid Edge DERMS and AMI 2.0 based capability
- Availability and treatment of the solution (*e.g.*, for which customers, with what options, when, and why)
- Updates to our Electric Rules, tariffs, or other offerings
- Interoperability and standards approach for manufacturers of controllable loads to connect to and qualify for use within the system
- Considerations for a series of future workshops as recommended in Section 4.5 of the Proposal to provide context and perspectives on the proposed items contained within Section 4.5.

With respect to the Proposal's reference to ChargeBoost, PanelBoost, Grid Edge DERMS, and Real-Time Pricing, PG&E has the following comments:

- PG&E views the EPIC 4.02 Programs (*i.e.*, ChargeBoost and PanelBoost) as options that could be made widely available to customers presented with Residential panel upgrades and/or service upgrades. However, PG&E wants to clarify its meaning when the Proposal characterizes PG&E's treatment of the EPIC 4.02 Programs (*i.e.*, ChargeBoost or PanelBoost) as its default mitigation for secondary capacity constraints experience by customer on 100A services.[17/] PG&E is not saying these Programs are the default engineering mitigation, and the Proposal's language stating that PG&E has made "…EPIC 4.02 (*i.e.*, ChargeBoost or PanelBoost) its default mitigation for secondary capacity constraints experienced by residential customers on 100 A services" should be removed from the Proposal. Instead, PG&E sees potential for the solution to become the consumer choice a majority of the time when

17/ Proposal at p. 31.

customers request adding incremental Residential electrification load (*i.e.*, when connecting an EV charger, heat-pump, or otherwise decarbonizing). The Proposal should therefore be updated to make it clear that these Programs are not currently the default mitigation as implied.

- Furthermore, there are limits to which new Residential load can be brought onto the network using flexible solutions before customer load curtailment negatively impacts customer service. This can lead to grid upgrades at some point in time, implying that these solutions are meant to defer customer driven upgrades for a period of time, but will not completely eliminate them as load growth continues.
- Lastly, for the nascent Grid Edge DERMS related programs (ChargeBoost and PanelBoost) PG&E recommends not defaulting customers onto Real-Time Pricing (RTP). The programs are focused on simplifying the offer and messaging for customers at this stage, and it would be premature and potentially detrimental to default a customer onto a different and decidedly more complicated pricing scheme that introduces new price exposure risk. PG&E requests to learn from RTP elsewhere[18/] and to follow up for implementation recommendations via the Tier 2 Grid Edge AL or other pathways as appropriate.

Regarding the potential affordability benefits of scaling these offerings, PG&E notes that while the Proposal correctly points out that PG&E's Part 2 Electrification Impact Study (EIS) found that secondary upgrades made up the majority of distribution grid infrastructure costs through 2040,[19/] PG&E notes that the scope of analysis included the secondary costs of new business energization and not just service transformer overloads. Within the Base Scenario, the

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18/ PG&E is currently running RTP pilots stemming from CPUC Decision (D.)24-01-032, D.20-12-029, and Resolution E-5192 ─ PG&E's Hourly Flex Pricing Pilots and Phase 2 of its Vehicle to Grid Pilots. PG&E is learning about RTP through its experience with the pilots and through formal Measurement and Evaluation reports, the first of which will be served to the service list in PG&E's 2023 General Rate Case Phase II Application 24-09-014 on August 3, 2026.

19/ *Id*. at p. 10.

EIS Part 2 found that overloaded service transformers corresponded to approximately $3.4 billion (21%) of secondary system costs, while the remaining approximately $12.5 billion (79%) corresponded to new service connections (*i.e.*, not utilizing existing infrastructure). The study further explains that these new service connections "refer to new transformers built in this study to meet customer load." These findings demonstrate that the majority of forecasted secondary infrastructure costs are associated with energizing new customer load via new equipment rather than replacing overloaded equipment. These costs likely cannot be avoided via FSCs and Operating Limits. New customers will require secondary projects that physically interconnect their premises to the grid. Upgrades required for interconnection include the extension of the primary distribution line from the nearest permanent and viable distribution facility to the customer site, as well as secondary transformer and service conductor installation. This implies that while there is potential for Grid Edge DERMS based solutions to defer grid upgrades, that potential would be limited to the subset of upgrades that are due to incremental addition of load that can reasonably be served by the solution. Already overloaded equipment, unsafe conditions, or other scenarios which do not meet standards (*e.g.*, parallel service transformers) likely will still need upgrades. Therefore, it is more accurate to focus on the ~20% of the secondary system costs identified in the EIS part 2 as potential candidates for flexible service.

- ***Section 4, Recommendation 5:*** *Establish a series of Energy Division-led workshops with reports to further develop Grid Edge DERMS solutions*

PG&E is supportive of workshops to further develop Grid Edge DERMS solutions, but believes it is premature to mandate or establish those workshops at this time. Due to the nascent nature of AMI 2.0 Grid Edge DERMS, and the lack of experience, industry development, and uniform adoption across the three IOUs; the Grid Edge DERMS workshops may slow down progress on electrification enablement if implemented prematurely, or worse could derive conclusions on a limited or isolated base of facts and understanding. PG&E also cautions that it will be challenging to have the customer voice heard in such workshops and that it may be

dominated by vendors that are describing the potential of a product that has not yet been widely tested by customers or utilities.

Therefore, PG&E proposes that Energy Division host these workshops after the filing of the Tier 2 Grid Edge ALs, which can be used to inform the design, scope, and timing of the workshops and which can also be paired with additional Grid Edge DERMS learnings as they develop over time.

Suggested redlines: Direct Energy Division staff-led workshops to further develop Grid Edge DERMS solutions 180 days after the filing of the Tier 2 Grid Edge AL. Workshops to discuss issues of capacity sharing, application authoring and program access, whether AMI meters are the appropriate long-term solution for computing the Operating Envelope, and ensuring that more devices than EV chargers can be locally controlled. Staff workshop reports would be filed to a successor Rulemaking.

- ***Section 5 Recommendations: Cybersecurity Considerations***
    - ***Section 5, Recommendation 1:*** *Direct IOUs to propose implementation of baseline cybersecurity considerations from the SIO-CS*

PG&E is supportive of the IOUs hosting workshops to vet how best to implement the SIO-CS phase 1 recommendations, providing a workshop report, and filing a Tier 2 Cybersecurity Implementation AL. However, PG&E believes there is a typo on page 51 of the Proposal regarding recommending a Tier 2 versus Tier 3 Cybersecurity Implementation AL: that should be corrected as follows: "IOUs file Tier ~~3~~ 2 Cybersecurity Implementation AL – 60 days after comments filed."[20/]

- ***Section 6 Recommendations: Bridging and Non-Bridging Approaches***
    - ***Section 6, Recommendation 1:*** *Establish durable non-bridging solutions for new flexible connections*

20/ *Id*. at p. 51.

The Proposal recommends expanding versions of currently available bridging standard flexible service con Rulemaking 21-06-017nection offerings as durable, non-bridging options.[21/] PG&E believes that the Proposal oversimplifies the complexities and implications of deferring or delaying capacity upgrades via non-bridging solutions,[22/] and should instead recommend a separate process for the consideration of non-bridging solutions that defer upgrades.

First, in line with the affordability guidelines PG&E proposes in its response to Question 5 below, non-bridging solutions should not be adopted unless they avoid or defer infrastructure investments in a manner that produces demonstrable and verifiable net benefits, after accounting for all costs associated with the solution, to all ratepayers at lower cost than alternative or traditional solutions. The DIDF has demonstrated the challenges and complexities of deferring distribution upgrades by non-bridging DERs.[23/] The experience with DIDF demonstrates that the potential to defer distribution upgrades should not be presumed to produce affordability benefits. If a flexible solution merely delays an upgrade while requiring additional program administration, monitoring, orchestration, or customer-specific infrastructure, non-participating customers may bear higher costs without corresponding benefits, which would adversely impact affordability. While acknowledging that the non-bridging solutions in the Proposal are not identical to DIDF, the challenges of meeting evolving customer capacity needs is relevant and lessons learned from DIDF need to be applied when considering non-bridging options, and it is clear that bridging and non-bridging options need to be designed fundamentally differently. Through the Enhanced Demand Response OIR, and Track 2 of this proceeding, PG&E will be proposing a flexible resource aggregation model and DER orchestration framework and

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21/ *Id*.

22/ PG&E interprets the Proposal's recommendations on bridging and non-bridging solutions to apply to the FSC Implementation and Non-Bridging Solutions ALs specifically.

23/ *See Pacific Gas and Electric Company's (U 39 E) Annual Distribution Investment Deferral Framework Reform and Partnership Pilot Reform Comments* (PG&E DIDF Comments), p. 2 (Apr. 26, 2024).

capabilities that address the specific structural gaps DIDF exposed. These capabilities will inform how PG&E approaches non-bridging issues as this proceeding evolves.

Second, the proposal simplifies and mischaracterizes how distribution upgrades are typically identified and the purpose they serve. The Proposal correctly focuses specifically on non-bridging approaches for upgrades triggered specifically for an individual customer.[24/] However, even for these customer-driven distribution upgrades, the upgrades are typically not identified based on a linear, static, one-time process in which one particular customer "triggers" a distribution upgrade and that upgrade is for solely that customer throughout its life. Instead, the upgrade is identified and dynamically evaluated via the Distribution Planning and Execution Process and throughout its execution lifecycle. The capacity needs of one triggering customer may not be the same as the benefit of the distribution upgrade overall for the system. The non-bridging recommendations mistakenly evaluate benefits solely from the perspective of the first customer requesting service, while ignoring system-wide benefits of the distribution upgrade for future customers or organic load growth. The next customer application for service or a material change in load from an existing customer may still require a traditional infrastructure upgrade. The proposal should therefore distinguish customer-specific bridging solutions from durable non-bridging solutions that need to consider both customer and system-level impacts.

Third, durable non-bridging solutions are only effective if customers are interested in long-term flexibility and willing to modify their energy consumption depending on grid conditions. In order to be durable and comparable to the distribution upgrade, the non-bridging solution must not only address the overload caused by the participating customer, but must also address the next customer that may seek energization as well as the organic load growth which results from added load at existing customer sites. Otherwise, the "durable" non-bridging solution may result in longer energization timelines for other customers because the capacity project was delayed.

24/ Proposal at p. 34.

For example, if Customer A accepts an operating limit under a "durable" FSC arrangement, and Customer B later requests service from the same constrained asset, Customer A would be required to reduce their firm capacity in order to ensure that Customer B could energize in a timely manner to ensure that such a "durable" arrangement wouldn't risk delaying energization timelines for other customers. And assuming the load flexibility of Customer A cannot meet the capacity needs of Customer B, a distribution upgrade is required regardless, and Customer B would be delayed by the lack of proactive capacity buildout. Therefore, the "durable" FSC arrangement for Customer A not only needs to meet the needs of Customer A, but needs to provide comparable capacity of the distribution upgrade for future customer and load growth.

Conversely, if the non-bridging solution is "non-durable" and only is in place until the next customer or organic load growth identifies the need for an upgrade, the proposal should clarify that the participating FSC customer will be converted to firm service once capacity upgrades are completed. Otherwise, a customer who opts into a "non-durable, non-bridging" flexible service connection would remain subject to restrictions when future customers later request unrestricted service. Without such clarification, the proposal may create inequitable outcomes for customers that initially elect flexible service.

Fourth, customers may not support broad adoption of non-bridging solutions. The proposal assumes customers will voluntarily choose long-term flexible service arrangements in lieu of traditional firm service. In practice, customer preferences may not align with broader ratepayer objectives. Based on customer feedback received over the past two years on PG&E's FSC offerings, customers have consistently emphasized the importance of ensuring that capacity upgrade projects are properly planned, initiated, and completed so they can receive their full subscribed capacity as soon as practicable. While bridging solutions are likely to be attractive because they provide speed-to-power while preserving access to future firm service, persistent and durable non-bridging solutions are expected to have low participation under current cost-allocation structures. Customers generally have very little financial incentive to not pursue firm

service when a substantial portion of upgrade costs is borne by the broader rate base. The most applicable situation may be when the customer benefits from extending the bridging solution, for example if it avoids triggering upgrades the customer has cost responsibility for. Accordingly, changes to service and energization requirements (*e.g.*, Rule 2 and Rule 3) may be necessary to ensure that potential customer load flexibility is available for use. PG&E recommends that modification of these tariffs be considered under Section 3, Recommendation 3 described above to enable the use of the load flexibility envisioned.

Fifth, any "durable" non-bridging solution must take on responsibility for accommodating future load growth and take on liability for failure to meet the needs of other customers or other impacts to the grid. Therefore, it will be important to include liability items (*e.g.*, qualifying conditions, insurance provisions, remediation plans, etc.) in the Tier 2 Non-Bridging Solutions AL.

Sixth, the proposal does not recognize the need for operational flexibility and reliability, and durable non-bridging solutions need to provide operational flexibility for future switching, contingencies, or load growth. The proposal does not adequately consider the operational value of available distribution capacity. IOUs rely on spare capacity not only for organic customer load growth, but also for operational flexibility: Planned maintenance, emergency restoration, and contingency operations. Expanding non-bridging FSC offerings introduces significant complexity in planning, outage restoration, switching operations, and contingency management by requiring IOUs to manage different classes of customers with varying load profiles and priorities. IOUs risk being restricted, or prevented, from transferring load during maintenance or outage events, potentially increasing customer interruptions, longer restoration times and reducing operational flexibility. Therefore, the impact of the non-bridging solution during system abnormalities, including long-duration clearances and emergency operations, would need to be examined. System abnormalities can persist for extended periods, and consideration would need to be taken to ensure that other customers are not impacted during such events. Operational flexibility and planning headroom have value for customers, addressing forecast uncertainty,

future customer growth, switching, contingency operations, and other abnormal system conditions.

The "durable" flexible arrangements proposed reduce operational flexibility by committing remaining headroom to specific customers. If adopted as proposed, PG&E may need to develop internal planning guidelines that initiate grid upgrade projects at a lower planning threshold (*e.g.*, 80% loading, rather than waiting until 100% loading), to account for the lack of operational flexibility. Such a change to planning could offset any envisioned savings from non-bridging arrangements. The proposal therefore risks overstating system-wide benefits of non-bridging solutions which risk deferring the need for an upgrade for the customer but may not avoid the need for the upgrade for the system. Any claimed ratepayer benefits should consider these other factors and the costs they may implicate to ensure actual overall actual ratepayer savings are realized.

Seventh, many of the non-bridging product offers in the Track 3 proposal are proposed prior to Track 2 establishing the framework for DER orchestration, requiring a proposed "solution" ahead of the framework to utilize the solution. A non-bridging service offering would place additional responsibility on customers to secure capacity through customer-provided solutions or through a utility-administered mechanism that can enroll and dispatch locational distributed energy resources (DERs) to provide incremental capacity during periods of potential overload. Without such capabilities, customers may face an increased risk of operational interruption under constrained system conditions. PG&E notes that the High DER Track 2 proceeding is intended to establish a framework for these use cases. Therefore, implementation of any non-bridging offering, including the full list of policy and operational issues that need to be considered (*e.g.*, remediation hierarchy, financial backstop, property transfer, third-party arrangements) should be coordinated with the development of the Track 2 framework and supporting operational capabilities. The non-bridging recommendations should therefore be considered on a different timeline than the bridging recommendations, with specifics proposals provided via the future Non-Bridging Advice Letter process. In addition, as described in PG&E's

response to Question 5, for all solutions, whether bridging or non-bridging, the CPUC should establish a common set of affordability principles to be used for assessing potential solutions prior to approval to ensure that non-participating customers do not subsidize participant-specific flexibility measures.

Finally, the findings of PG&E's EIS 2 demonstrate that long-term affordability is driven not solely by avoiding infrastructure upgrades, but by enabling electrification growth and efficiently serving new customer loads. PG&E's EIS 2 found that "electrification growth may provide downward pressure on distribution rates by as much as 25% by 2040."[25/] This finding was based on the significant increase in electricity sales associated with transportation and building electrification which allows fixed distribution costs to be recovered across a larger volume of energy consumption. The study found that electrification requires substantial investment in the distribution system to support customer energizations and future load growth. These findings suggest that advancing affordability requires creating sufficient distribution capacity to accommodate new electrification load and reducing barriers to customer energization. Investments that enable additional electric vehicles, heat pumps, and other electrification technologies to be connected to the grid support the very load growth that EIS 2 identified as a key driver of downward pressure on rates. Conversely, approaches that focus primarily on deferring infrastructure without adequately considering or supporting future growth may risk slowing the pace or hampering the volume of electrification adoption and reducing the load growth benefits identified in the study.

For all of these reasons, PG&E recommends the priority of the Proposal be focused on bridging solutions that accelerate energization, and that non-bridging solutions be developed separately and with a focus on ensuring they do not delay customer energizations or create unintended costs or consequences.

25/ PG&E, Electrification Impacts Study (EIS) Part 2 Final Report, p. 14.

In summary, bridging and non-bridging solutions are fundamentally different, and non-bridging solutions need to be developed independently and on a different timeline. Therefore, PG&E recommends that the Proposal be modified so that the Non-Bridging solutions be implemented via an Advice Letter at a later date in either the High DER or successor proceeding, allowing focus and prioritization on acceleration of customer energizations via bridging solutions. Therefore, the Tier 2 FSC Implementation AL should come first, with a timeline of 180 days within the Track 3 decision to allow for proper development of these options. The Tier 2 Non-Bridging Solutions AL should then follow 180 days after the Resolution of the Tier 2 FSC Implementation AL. This would also allow time for Track 2 to progress and inform the Tier 2 Non-Bridging Solutions AL. The Proposal's recommendation that the Tier 2 Non-Bridging Solutions AL should be filed 90 days after the Decision is especially problematic and would result in unworkable options and de-prioritizing the products customers are most requesting (*i.e.*, Speed to Power).

Suggested redlines: Direct SCE and PG&E to offer non-bridging ~~versions of current bridging~~ offerings at a later date that do not impact customer energization timelines and maintain operational flexibility. Implemented through the Tier 2 Non-Bridging Solutions AL in this or successor proceedings.

- ***Section 6, Recommendation 2:*** *Clarification that current Static and Variable Operating Envelope customers can elect to transition from a bridging to a persistent non-bridging solution*

PG&E agrees customers should be given choice regarding transitioning to a non-bridging solution and that it is critical that such a decision be made in a timely manner to ensure that the distribution upgrade work can continue without delay while minimizing the risk of stranded costs. PG&E agrees that a time window (*e.g.*, 45 days) needs to be established for the customer to make such a decision, and that engineering and design costs prior to the customer decision need to continue and be rate based.[26/] Additionally, a customer who has opted out of an upgrade

26/ Proposal at pp, 52-53.

in favor of a persistent non-bridging solution should take on the responsibility of the non-bridging solution that may exceed their responsibilities under the bridging solution. Furthermore, customers are typically charged a monthly subscription fee by third parties to maintain flexible connection and communications equipment, and so a transition to a non-bridging solution needs to consider the costs of conversion and maintaining such a non-bridging solution. If a customer currently on a Static or Variable Operating Envelope decides the arrangement meets its needs long-term, it should be allowed to elect a persistent non-bridging option under reasonable conditions, although the conditions of that non-bridging option may be fundamentally different than the bridging option as described above. However, PG&E notes that the challenges in non-bridging solutions listed above will equally apply to transitioning customers, and so the opportunities and number of customers electing to transition is expected to be low.

While PG&E supports offering such a transition as an option, it should be made clear this is entirely an option and not a requirement. This reflects customers' operational needs and to ensure the proposal does not discourage the adoption of bridging solutions. Associating Flex Connect as a non-bridging solution risks undermining program participation and impeding broader adoption of flexible service connections, which are primarily intended to accelerate customer access to power while supporting efficient grid utilization.

Lastly, the implementation of this transition offer should be included in the Tier 2 Non-Bridging Solutions AL, not the Tier 2 FSC Implementation AL, because the non-bridging option needs to be developed and is inherently different (see Section, Recommendation 1 comments) from the bridging option they would be transitioning from.

Suggested redlines: Clarify that current Static and Variable Operating Envelope customers can elect to transition from a bridging to a persistent non-bridging solution, and direct IOUs to implement this via the Tier 2 ~~FSC Implementation~~ Non-Bridging Solutions AL.

- ***Section 6, Recommendation 3:*** *PG&E should formalize its Flex Connect offering and expand its non-bridging Flex Connect Generation option to load customers*

PG&E supports continued development of Flexible Service Connection solutions where such offerings provide measurable customer and ratepayer benefits. However, similar to D.26-02-25 adoption of a Standard Offer, PG&E recommends that formalizing of its Flex Connect offering is better accomplished through a refined program process and criteria than a more rigid tariff, allowing for more flexibility for it to evolve over time as learnings grow, especially considering it is first-of-its-kind. The proposal should avoid establishing implementation requirements that assume widespread participation and instead allow utilities to collect empirical adoption data and evolve customer centered offerings before imposing universal offering obligations.

Furthermore, the current value proposition of Flex Connect is to provide customers with accelerated access to power while allowing them to voluntarily take on the risk of potential power reductions that may affect day-to-day operations. This tradeoff enables customers to achieve faster energization than would otherwise be possible under traditional energization timelines. Based on customer feedback received over the past two years, customers consistently emphasize the importance of ensuring that capacity upgrade projects are properly planned, initiated, and completed so they can receive their full subscribed capacity as soon as practicable. This includes cases where distribution infrastructure upgrades were completed earlier than anticipated, eliminating the need for continued flexible connection service, not to mention curtailments impacting beneficial load growth. These experiences underscore the importance of preserving customer choice. Customers participating in Flex Connect bear the operational and financial risks associated with a flexible service arrangement and should therefore have the ability to determine whether participation continues to provide value based on their specific circumstances.

In specific circumstances, Flex Connect may be appropriate as a non-bridging solution where specific grid conditions are met. For example, this may include when a single large load

drives significant infrastructure upgrade costs and those upgrades are not expected to provide material benefits to other customers, support anticipated load growth, or address broader system needs. In such cases, a non-bridging Flex Connect arrangement may provide a cost-effective alternative that delivers potential ratepayer benefits while continuing to meet customer needs. Therefore, the solution may only be feasible to offer in specific situations.

Furthermore, PG&E recommends that the formalization of the Flex Connect Standard Offer should continue to be flexible and adaptable, with future modifications made quickly and frequently that can be informed by actual implementation data, customer participation, operational performance, and lessons learned. Therefore, PG&E recommends that a process for future modification needs to be established, with D.26-02-025 serving as an example of one possible approach.

Regarding expanding PG&E's non-bridging Flex Connect Generation option to load customers, the Section 6, Recommendation 1 already recommends offering non-bridging options to load customers, and this offering needs to be developed and so should not be a "simple change" of expanding the Generation option to load customers.[27/] For example, cost-recovery and customer cost obligations differ meaningfully between load customers and generation interconnection customers. So while PG&E supports development of a non-bridging Flex Connect option for load as described in PG&E's response to Section 6, Recommendation 1 above. The recommendation to just simply expand this to a Generation option should be removed.

Suggested redlines: Direct PG&E to formalize its Flex Connect offering ~~and expand its non-bridging Flex Connect generation option to load customers~~. Implemented through the Tier 2 Non-Bridging Solutions AL.

- ***Section 6, Recommendation 4:*** *Large IOUs should be required to implement a non-bridging version of the Standard Offer*

27/ *Id*.

PG&E provides extensive comments on why a non-bridging version would be significantly different than the current bridging offers above in response to Section 6, Recommendation 1. PG&E believes this recommendation may be repetitive of Section 6, Recommendation 1 and thus may not be needed. Regardless, any non-bridging version needs to consider many additional aspects, including the impact to future customers and other existing customers, including customer energization timelines and operational flexibility.

Additionally, PG&E does not currently require UL 3141 certified controls and suggests that other options by mutual agreement also be acceptable as there are still some unanswered questions about the scalability, availability and applicability of UL 3141 as previously discussed. For any flexible service connection Standard Offer, PG&E suggests that both UL 3141 and non-UL 3141 certified controls be acceptable, when mutually agreed upon.

Suggested redlines: Direct the large IOUs to implement a non-bridging Static Operating Envelope ~~version of the~~ Standard Offer. Implemented through the Tier 2 Non-Bridging Solutions AL.

- ***Section 7 Recommendations: Competition and Market Access Considerations***
    - ***Section 7, Recommendation 1:*** *Interoperability and Customer Choice Requirements*

PG&E agrees that a workshop would be beneficial to ensure customers participating in flexible connection offerings should retain the ability to participate in utility, CCA, aggregator, or self-managed programs without restrictions from proprietary vendor arrangements.

- ***Section 8. Real-Time Pricing and Economic Signals for Flexible Connection Customers***
    - ***Section 8, Recommendation 1:*** *Real-Time Pricing Rate Enrollment*

PG&E recognizes that customers utilizing Dynamic Operating Envelopes (DOEs) or Variable Operating Envelopes (VOEs) may be well positioned to enroll on Real-Time Pricing (RTP) rate because these customers may have already invested in technologies that enable day-ahead load flexibility. However, the Commission should not presume that participation in a

flexible connection arrangement implies that default enrollment on an RTP rate is appropriate. The technical capabilities required to participate in the Flexible Service Connections (FSC) program and receive DOEs or VOEs are distinct from the capabilities, operational processes, and customer readiness required to effectively participate on an RTP rate. Participation in FSC *should not be* interpreted as evidence that default RTP enrollment is appropriate. Such a requirement could increase customer adoption barriers and undermine the primary objective of FSC, which is to provide a bridging solution that accelerates customer access to electricity while permanent grid upgrades are completed.

PG&E is concerned that default RTP enrollment could expose customers to pricing complexity that require additional capabilities beyond those needed to participate successfully in a flexible connection arrangement. A customer may be fully capable of operating within a dynamic or variable operating envelope but may not possess the capacity to optimize for bill savings under RTP, have the risk tolerance necessary to manage RTP exposure effectively, or have operational needs that are compatible with responding to RTP. Participation in a flexible service arrangement should not be viewed as a proxy for a customer's readiness to assume the risks associated with RTP. PG&E is concerned that defaulting customers to RTP could create enrollment friction, slow flexible service deployments, and potentially result in poor customer experiences that could impede customer willingness to participate in Flexible Service Connections.

PG&E therefore recommends that the Commission encourage, but not default, RTP enrollment for FSC customers, who should retain meaningful choice at enrollment to select a rate that best suits the needs of their entire premise load and their operational constraints. It is reasonable for those customers to receive information on RTP offerings, and customers should be able to enroll, but should not be defaulted to RTP, even with an opt-out option. RTP is very complex and customers should always enroll in RTP as an *active decision*, fully informed about the risks and opportunities associated with RTP.

Suggested redlines: Direct IOUs to ~~default~~ inform customers on a Variable or Dynamic Operating Envelope ~~to a~~ about real-time pricing rate offerings, and direct IOUs to track relevant data. Implemented through the Tier 2 FSC Implementation AL.

- ***Section 8, Recommendation 2****: Data Tracking*

PG&E's comments and suggested redlines are included in Section 8, Recommendation 1 above.

3. Section 9 of the proposal summarizes recommendations for Commission action based on the stated goal of the proposal. Do parties find that any additional recommendations are warranted in support of this goal?

PG&E's additional recommendation pertains to modifications to Service and Energization Rules as described in addressing Section 3, Recommendation 3 above.

4. For the proposed Advice Letters what, if any, additional implementation or program design elements should be addressed in each Advice Letter. Do parties have recommendations on how to consolidate advice letters or make the process more efficient?

As described above, non-bridging solutions raise additional complexities and challenges, and PG&E therefore recommends they be examined under different timelines and processes. As bridging solutions should be the priority, the Tier 2 FSC Implementation AL should come first, with a timeline of 180 days within the Track 3 decision to allow for proper development of these options.

As described in PG&E's response to Section 6, Recommendation 1 above, the Tier 2 Non-Bridging Solutions AL should then follow 180 days after the Resolution of the Tier 2 FSC Implementation AL. This would also allow time for Track 2 to progress and inform the Tier 2 Non-Bridging Solutions AL. The Proposal's recommendation that the Tier 2 Non-Bridging Solutions AL should be filed 90 days after the Tier 3 Decision[28/] is especially problematic and would result in unworkable options and de-prioritizing the products customers are most requesting (*i.e.*, Speed to Power).

28/ *Id*, p 52.

A timeline for the Tier 2 Grid Edge DERMS AL is not specified, but given its complexity a timeline of 180 days after the Track 3 Decision is prudent.

Furthermore, it will be critical that future modifications can be made quickly and frequently for all adopted solutions, given the novelty, lack of experience and complexity with many of the proposed solutions. The Proposal may be premature in requiring Standard Offers for options that have limited implementation data available, with the IOUs only having offered limited versions of flexible services on an interim basis to date. Furthermore, there is little benchmarking or learnings available with other utilities, given PG&E is on the leading edge of much of this adoption. Therefore, flexibility in the programs and in future modifications are needed that can be informed by actual implementation data, customer participation, operational performance, and lessons learned. Therefore, PG&E recommends that a process for future modification needs to be established, with D.26-02-025 serving as an example of one possible approach.

Furthermore, the solutions put forth in the Advice Letters should take a flexible approach that allows for variations between customer types and needs rather than a "standard offer, one size fits all" approach. Flexibility is needed to account for the differences between residential EV charging, large commercial loads, multi-megawatt customers, etc. For example, residential small-load use cases such as residential EV charging with shared secondary transformers and service conductor constraints may be relevant for Grid Edge DERMS solutions. Conversely, large-load use cases including multi-megawatt customers with dedicated service or primary distribution constraints may be more appropriate for Static or Variable Operating Envelopes and Flex Connect-type offerings. Flexibility is needed so that solutions applicable to one customer class do not unintentionally impose requirements on or create consequences for another class where the value proposition, planning process, and technology needs are different. Therefore, the recommended solutions in the Proposal should be implemented via the Advice Letters as customer centric, replacing standard, regulated offers with flexible development of products designed to meet customer needs.

5. Many of the Proposal's recommendations are premised on the goal of affordability and ratepayer savings from greater capacity utilization, speed to power, and deferral or avoidance of upgrade capital expenditure. To realize these goals, quantification of ratepayer costs and benefits will be necessary. For each recommendation how should the IOUs measure, track and report key costs and benefit metrics?

It should not be presumed that increased utilization of existing infrastructure, speed to power, or deferral or avoidance of capital upgrade expenditures alone automatically results in affordability benefits. Affordability benefits exist only to the extent that flexible service solutions produce demonstrable and verifiable net benefits, after accounting for all costs associated with the solution, and the solution results in lower cost than alternative or traditional solutions. The Commission should coordinate affordability considerations in Track 3 with cost-effectiveness methods developed in Track 2 of this proceeding. A common set of affordability metrics for the proposed solutions would be useful. PG&E believes the following list should be considered in measuring, tracking, and reporting cost and benefit metrics:

- **Net Ratepayer Benefits** – Benefits should exceed all costs, including, but not limited to, financial incentives, implementation and administration costs, orchestration (*e.g.*, DERMS system) costs, AMI enhancements, communications, engineering, compliance, and any future infrastructure upgrade costs that remain necessary.
- **No New or Increased Cost Shifts** – In general and with few exceptions, non-participating customers should not see higher rates as a result of these projects.
- **All Avoided Costs Should be Verifiable, Measurable, and Realized** – A clear criteria should be established for ascertaining whether ratepayer costs savings are real and realizable. For instance, infrastructure deferral value should be assigned when upgrade timing changes in a material way (*e.g.*, beyond a GRC cycle), costs are actually avoided or deferred, and reliability and operational flexibility are maintained. In addition, only benefits that ultimately impact customer rates should be considered.
- **No Double Compensation** - Participating customers should not be compensated multiple times or through multiple programs for the same benefit or to cover the same cost.

PG&E recommends that the primary purpose and priority of flexible service connections should be accelerating customer energizations (*i.e.*, speed to power), and believes that ratepayer savings from non-bridging solutions may be more challenging to realize. Tracking both the overall costs and ratepayer benefits is appropriate, however creating overly detailed and prescriptive reporting and tracking burdens will only hinder the development of these options and increase costs. PG&E recommends that the IOUs therefore include in the Tier 2 FSC Implementation AL and the Tier 2 Non-Bridging Solutions AL how they will track ratepayer costs and benefits.

PG&E notes that the solutions proposed in the Proposal assume the timely implementation of Grid Modernization and other investments that PG&E has proposed in PG&E's 2027-2030 General Rate Case (*e.g.*, DERMS, AMI 2.0, etc). Therefore, implementation of this Proposal is dependent upon approval of those relevant aspects of PG&E's GRC forecast. For example, costs associated with the DERMS implementation and scaling of technical functionality is contingent on the approval of PG&E's 2027-2030 General Rate Case. Rather than creating a duplicative cost tracking effort here, the costs of those programs considered in PG&E's 2027-2030 General Rate Case should be tracked and reported on as part of that process.

Furthermore, offering of non-bridging solutions will likely require parallel expenditures on both the flexible connection solution for the customer and the distribution upgrades at times, as well as other contingency costs, in order to ensure customer energization timelines, safety, and reliability are maintained. For example, the Proposal recommends that utilities should retain the ability to recover prudently incurred costs associated with work already performed on behalf of projects that transition from bridging to non-bridging solutions.[29/] Therefore, PG&E recommends expanding the use of the DERDDA memorandum account to record and recover prudently incurred costs associated with the Proposal.

29/ *Id*. at p. 36.

Lastly, while PG&E recognizes that Flexible Service Connections and Limited Generation Profile (LGP) option address different use cases, the lack of customer uptake to date of the LGP option offers a cautionary tale as to why scaling the Proposal's recommendations and achieving ratepayer savings may be challenging. Since implementation of the LGP on July 8, 2025, PG&E has processed only a single LGP application that has gone through Initial Review of the Fast Track process and reached study approved state, despite receiving tens of thousands of interconnection applications during the same period. PG&E received approximately 87,242 interconnection applications in 2025 and approximately 37,324 applications in 2026 to date, yet only one customer purposely elected to pursue the LGP option. While LGPs and Flexible Service Connections serve different customer classes, both are specialized voluntary offerings that require customers to accept operational limitations in exchange for avoiding or deferring traditional infrastructure upgrades. To implement the LGP pathway, PG&E incurred costs associated with information technology development, GRIP portal enhancements, system integration, vendor-supported implementation activities, testing, ongoing maintenance, and related process changes necessary to operationalize the program. Despite these investments, customer adoption has remained extremely limited. This experience demonstrates that the existence of a technically feasible and potentially beneficial offering does not necessarily translate into meaningful customer participation or ratepayer savings.

The LGP experience provides a cautionary example against assuming broad customer interest or adoption of voluntary non-firm service arrangements. PG&E has already incurred meaningful ratepayer-funded implementation costs on a non-firm program that hasn't produced measurable ratepayer benefit, and the Commission should be cautious about repeating that pattern. Customers seeking electric service may be hesitant to participate in an energy management program. Flexible Service Connection offerings require customers to understand and accept operational limitations, equipment obligations, communications requirements, and interoperability requirements. Consequently, an iterative and flexible approach, informed by

actual customer interest, will allow for the development of offerings that are customer-centric and beneficial for ratepayers.

6. How should IOUs ensure the existence of bridging solutions, non-bridging solutions, or the change from a bridging solution to a non-bridging solution are timely communicated with the California Energy Commission for forecasting purposes?

PG&E does not believe this issue is material for the California Energy Commission (CEC) forecasts at the current and near-future scales of adoption and is best addressed by the ongoing existing coordination between the IOU's and CEC regardless. The IOU and CEC can simply communicate this as needed using existing processes as laid out in various Track 1 Decisions. Therefore, no action is needed by this Proposal on this matter.

7. The proposal recommends the Commission direct SDG&E to stand up a static FSC offering that is aligned with the requirements directed in D.26-02-025 for PG&E and SCE.

PG&E has no comments at this time.

8. What hardware, software, or data sharing safeguards may be needed to ensure that customers can obtain a flexible connection without being restricted by proprietary arrangements?

PG&E supports reasonable safeguards that preserve customer choice, interoperability, and operational reliability. Such safeguards should focus on functional capabilities and performance requirements, rather than mandating a particular vendor, technology architecture, or proprietary platform. At a minimum, any framework should ensure that customers are not required to use a single proprietary device, aggregator, or platform to obtain a flexible connection where other solutions can satisfy the applicable technical, cybersecurity, communications, and operational requirements.

However, customer choice must be balanced against the utility's obligation to maintain safe and reliable operation of the distribution system. Any hardware or software used to implement operating limits or operating envelopes should be capable of reliably receiving, implementing, and verifying compliance with applicable limits; meeting cybersecurity requirements; supporting necessary data exchange with the utility; and providing sufficient

visibility for planning, operations, and enforcement. An example of this is the requirements defined in the Customer-Owned Telemetry (COT) Procedure,[30/] that is also leveraged for PG&E's Flex Connect program. In this case, PG&E is using open standards and is available to any vendor to participate as a method to avoid restrictions through proprietary arrangements.

Therefore, flexibility for the IOUs to develop and modify such requirements is critical as the proposed solutions are developed and evolve over time.

9. Are there any safety concerns that should be highlighted?

PG&E discussed a number of operational issues that could potentially impact safety and reliability, especially regarding non-bridging solutions in Section 6, Recommendation 1, above. Given these potential impacts, it will also be important to consider the liability and insurance provisions for customers who opt to provide such non-bridging solutions.

II. PG&E'S RESPONSES TO QUESTIONS PRESENTED IN SECTION 4

1. What testing and certification programs, if any, should or should not be considered if the Commission elects to pursue Path H as an option to address cybersecurity issues?

a. What elements of the testing and certification programs identified lead to your conclusion that this program should or should not be pursued?

PG&E believes this should be revisited via the previously discussed IOU-hosted workshops to vet how best to implement the SIO-CS phase 1 recommendations and ensure the most up to date information regarding available testing and certification is used since the publishing of the SIO-CS Working Group Report.

30/ Available at: Customer-Owned Telemehttps://www.pge.com/assets/pge/docs/about/doing-business-with-pge/TD-2306P-01.pdftry (COT) Procedure.

III. CONCLUSION

PG&E appreciates the opportunity to provide these comments on the Assigned Commissioner's Proposal and responses to the questions posed in Sections 2 and 4 of the Ruling.

Respectfully Submitted,

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Appendix A

Proposed Redlines to Commissioner's Proposal Recommendations

PG&E proposes the following redlines (language additions in underline and deletions in ~~strikethrough~~) to the Commissioner's FSC Proposal recommendations on pages 6 through 8:

- Direct SDG&E to establish a Standard Offer, similar to the one established for SCE and PG&E via D.26-02-025. Implemented through a Tier 2 AL within 120 days of the Track 3 decision (Tier 2 FSC Implementation AL).
- Direct IOUs to ~~record and~~ provide values helpful to dedicated infrastructure customers independently implementing Operating Limits when requested during the energization process, while not delaying or halting any step in the energization process timeline. Implemented through the Tier 2 FSC Implementation AL. The IOUs are authorized to file a Tier 2 AL in this or successor proceedings to revisit this requirement if ratepayer costs are exceeding benefits.
- Direct IOUs to make modifications to ~~Electric Rule 2~~ the Service and Energization Rules (*e.g.*, Electric Rule 2, Rule 3, etc.) to update the definition of Controlled Load, clarify customer responsibilities, and add alignment language between the large IOUs. Implemented through the Tier 2 FSC Implementation AL and the Tier 2 Grid Edge DERMS AL within ~~120~~ 180 days of the Track 3 decision~~)~~.
- Direct IOUs that ~~before a ratepayer funded distribution upgrade associated with a customer,~~ each IOU must evaluate, when requested by the customer, whether a Limited Operating arrangement, Operating Envelope or other flexible connection mitigation enabled by PCS can safely satisfy the customer's requested capacity in lieu of a ratepayer funded distribution upgrade associated with that customer, to the extent the mitigation is feasible, does not delay customer energizations, and does not impact operational flexibility and reliability. Implemented through the Tier 2 FSC Implementation AL.
- Direct IOUs to provide Operating Limits as ~~the default~~ a mitigation option, where it will safely provide energization without slowing down customer energizations or impacting reliability, for distribution transformer upgrades, using certified UL

3141 devices or other means as approved by the IOU. Implemented through the Tier 2 FSC Implementation AL.

- Direct for SCE and SDG&E to implement Variable Operating Envelope bridging solutions modeled after PG&E's Flex Connect. Implemented through a Tier 2 AL within one year of a Track 3 decision (Tier 2 Flex Connect AL).
- Direct the large IOUs host a workshop to further the discussion on Dynamic Operating Envelope to address abnormal grid conditions, and submit a workshop report within one year of a Track 3 decision.
- Direct SCE and SDG&E to implement and scale Grid Edge DERMS for residential EV charging, similar to PG&E's ChargeBoost program and direct PG&E to expand and scale this pilot. Implemented through a Tier 2 AL (Tier 2 Grid Edge DERMS AL).
- Direct Energy Division staff-led workshops to further develop Grid Edge DERMS solutions 180 days after the filing of the Tier 2 Grid Edge AL. Workshops to discuss issues of capacity sharing, application authoring and program access, whether AMI meters are the appropriate long-term solution for computing the Operating Envelope, and ensuring that more devices than EV chargers can be locally controlled. Staff workshop reports would be filed to a successor Rulemaking.
- Direct a workshop, workshop report, and filing for IOUs to implement cybersecurity considerations from SIOWG. Implemented through a Tier 2 AL (Tier 2 Cybersecurity Implementation AL).
- Direct SCE and PG&E to offer non-bridging ~~versions of current bridging~~ offerings at a later date that do not impact customer energization timelines and maintain operational flexibility. Implemented through the Tier 2 Non-Bridging Solutions AL in this or successor proceedings.
- Clarify that current Static and Variable Operating Envelope customers can elect to transition from a bridging to a persistent non-bridging solution, and direct IOUs to implement this via the Tier 2 ~~FSC Implementation~~ Non-Bridging Solutions AL.

- Direct PG&E to formalize its Flex Connect offering ~~and expand its non-bridging Flex Connect generation option to load customers~~. Implemented through the Tier 2 Non-Bridging Solutions AL.
- Direct the large IOUs to implement a non-bridging Static Operating Envelope ~~version of the~~ Standard Offer. Implemented through the Tier 2 Non-Bridging Solutions AL.
- Establish Energy Division staff-led workshop to discuss reasonable guardrails to ensure interoperability and customer choice. Implemented through a workshop report filed within a successor Rulemaking.
- Direct IOUs to ~~default~~ *inform* customers on a Variable or Dynamic Operating Envelope ~~to a~~ *about* real-time pricing rate offerings, and direct IOUs to track relevant data. Implemented through the Tier 2 FSC Implementation AL.