BEFORE THE PUBLIC UTILITIES COMMISSION
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Order Instituting Rulemaking to Establish Energization Timelines.	Rulemaking 24-01-018

COMMENTS OF EMERALD AI ON PROPOSED DECISION ESTABLISHING A STANDARD OFFER FOR FLEXIBLE SERVICE CONNECTIONS

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I. INTRODUCTION

Emerald AI submits these comments pursuant to Rule 14.3 of the Commission's Rules of Practice and Procedure on the Proposed Decision in Rulemaking 24-01-018, which directs Pacific Gas and Electric Company (PG&E) and Southern California Edison Company (SCE) to implement a tariffed Standard Offer Static Flexible Service Connection (FSC) as an optional pathway within Energization Step 2 (Engineering and Design) for customers affected by distribution capacity constraints.

Emerald AI appreciates the Commission's leadership in confronting the reliability, affordability, and cost-allocation challenges posed by rapid large-load growth and accelerating electrification, while also recognizing California's interest in supporting investment, jobs, and AI innovation. Emerald AI is a software company that enables large electricity customers such as data centers and other energy-intensive facilities to operate flexibly, by translating grid or utility operating constraints into verifiable, site-level load adjustments while assuring stringent performance for advanced computing workloads. Emerald AI provides an AI-powered software engine that orchestrates cloud computing and AI workloads alongside onsite energy resources such as storage to dynamically adjust power demand. Our platform combines a simulation engine that maintains a digital twin of a data center's power use with an automated execution engine and a communication module for utilities and data centers to exchange signals and monitor and verify performance of flexible dispatch signals. We aim to enable faster and larger power interconnections for data centers while avoiding and deferring energy infrastructure upgrades, advancing affordability, and bolstering grid reliability.

In the Next Steps Effort, Emerald AI strongly supports the Commission's direction to establish standard offer FSCs that can deliver near-term firm capacity to expedite energization when distribution capacity constraints exist, while maintaining safety and reliability through clearly defined Limited Load Profiles (LLPs). This core conclusion is critical: the greatest value of flexible service is not only faster energization, but also the ability to reduce peak system stress in ways that can materially change planning outcomes and improve cost-effectiveness for all customers. While the Proposed Decision appropriately limits the Standard Offer to a near-term, firm-capacity "bridge-to-wires" use case, the Commission's reporting and refinement framework should enable quantification over time of system and ratepayer benefits that can result when customers reliably operate within LLPs, including reduced peak stress and deferred infrastructure needs where supported by data.

The Proposed Decision correctly recognizes that a "Flexible Connection" allows a customer to "match their site's power levels to the amount of power that the grid can safely handle" by adhering to a profile generated by IOU engineers.[1]

Emerald AI supports the Commission's direction to establish a near-term Standard Offer Static FSC modeled on PG&E's Load Limit Letter (LLL) approach.[2] The record also confirms that "parties are not aware of any standardized, scalable processes in the United States" that California can look to for learnings.[3] Emerald AI therefore emphasizes clarifications that make the Standard Offer scalable, predictable, and enforceable.

For these reasons, Emerald AI respectfully requests that the Commission adopt the Proposed Decision with targeted clarifications that: (1) preserve technology neutrality for customer controls; (2) strengthen the Standard Offer FSC framework so it is not merely a static "bridge-to-wires," but a scalable, verifiable flexibility pathway grounded in pilot experience and; (3) ensure reporting and data collection enables rapid refinement of the Standard Offer and quantification of benefits.

II. COMMENTS

A. Adopt the Proposed Decision and Clarify the Standard Offer as a Performance-Based Pathway to Firm Capacity Within an LLP

Emerald AI supports the Proposed Decision's direction for PG&E and SCE to establish a Standard Offer that provides firm capacity in the near term to expedite energization when distribution capacity constraints prevent timely service at a customer's full requested load.[4]

The Proposed Decision defines an FSC as "a means of energizing new load … under specified import limits and operational conditions that vary over time," and defines the associated Limited Load Profile (LLP) as the profile containing "the maximum power" that can be imported. [5] For large loads, these definitions support the Commission's objective: the Standard Offer should function as a clear, performance-based pathway for customers to receive firm service at the level the grid can safely accommodate so long as the customer can reliably operate within the LLP.

Consistent with the Commission's findings that FSCs are "bridging solutions" (i.e., "bridge to wires") that end once the underlying distribution capacity constraint is resolved,[6] Emerald AI recommends the Commission clarify that the Standard Offer is available as a temporary,

[1] Proposed Decision at 7
[2] Proposed Decision at 11
[3] Proposed Decision at 8
[4] Proposed Decision at 6–7
[5] Appendix A
[6] Proposed Decision at 8–9

enforceable operating envelope for customers seeking earlier energization while upgrades are pending.

Emerald AI also supports the Proposed Decision's approach to LLP granularity—establishing a minimum level of standardized seasonal and daily values while allowing IOU engineers to exceed the minimum where justified—and supports offering customers an option to request a more granular LLP (e.g., a 24-value structure) where the IOU has the technical capability and the requesting customer bears reasonable incremental study cost. Standardized, machine-readable LLP templates will improve customer compliance and reduce implementation friction for large flexible loads.

B. Implement a Scalable Standard Offer Static FSC Based on Preprogrammed LLPs, While Preserving Optional Enhanced Offerings

The Commission appropriately directs the IOUs to implement a Standard Offer Static FSC "at this time," recognizing that SCE's LCMS pilot is scheduled to conclude and that PG&E's LLL has been provided through an informal, non-tariffed process.[7]

Emerald AI also supports the Commission's emphasis on standardization and technology neutrality. The record reflects that both PG&E and SCE currently offer static FSCs based on LLPs that provide firm capacity, while PG&E has also offered an approach utilizing forecasts and communications to provide non-firm capacity.[8]

Consistent with the Transparency Ruling, the Standard Offer should remain (i) based on "preprogrammed Limited Load Profiles (LLPs)," (ii) limited to situations where constrained capacity exists, (iii) independent of customer compensation, and (iv) non-communication-based.[9]

However, the Commission should preserve an implementation pathway, separate from the Standard Offer, for customers that can provide verifiable, higher-performance flexibility (e.g., through optional telemetry and secure interfaces) to safely unlock additional non-firm capacity where appropriate. This approach aligns with the Commission's broader "Next Steps Effort" focus on expediting energization projects, including when upstream upgrades are necessary.[10]

[7] Proposed Decision at 11–12
[8] Proposed Decision at 8–10
[9] Proposed Decision at 20–21
[10] Proposed Decision at 6–7

In addition, Emerald AI also recommends the Commission clarify that nothing in the Standard Offer framework is intended to limit or prejudice future consideration of dynamic or non-firm flexibility offerings in other proceedings (including the High DER proceeding), or voluntary utility pilots that remain outside the Standard Offer. This will preserve space for innovation while keeping the Standard Offer itself simple, static, and broadly scalable as the Proposed Decision intends.

While the LLP limits themselves remain static under this Standard Offer, Emerald AI emphasizes that *how* a customer manages to those limits can be dynamic and software-driven, allowing for greater utilization of the available capacity.

C. Measurement and Verification: Retain AMI-Based Compliance, with Optional Customer Telemetry

Emerald AI supports the Commission's determination that it is reasonable "to not require telemetry as a part of the Standard Offer" and to rely on Advanced Metering Infrastructure (AMI) as "a sufficient source of data" to ensure customers are operating within their LLP.[11]

For clarity, Emerald AI's recommendation is limited to **customer-elective telemetry for measurement, verification, and faster compliance confirmation** and does not contemplate utility-to-customer operational dispatch communications that would change LLP values or convert the Standard Offer into a dynamic, non-firm offering.

To enhance scalability without increasing burden on all participants, Emerald AI recommends that the IOUs' Implementation Advice Letter include an optional telemetry pathway that customers may elect (at their discretion) to support: (1) faster confirmation of compliance, (2) reduced need for conservative LLP assumptions, and (3) improved data collection to refine LLP design over time.

An optional pathway is consistent with the Proposed Decision's recognition that certain pilots have contemplated communications and DERMS-informed approaches for non-firm capacity, but that the Standard Offer should remain static and broadly applicable. [12]

D. Preserve Technology Neutrality for Customer Controls, Including Software-Based Controls

Emerald AI supports the Proposed Decision's statement that "the Commission is not seeking to dictate the method of load control." [13] For large customers, particularly modern data centers, compliance with an LLP may be achieved through hardware controls, software controls, or hybrid approaches.

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[11] Proposed Decision at 64

[12] Proposed Decision at 9–11

[13] Proposed Decision at 39

Emerald AI's software platform provides one example of a technology-neutral approach: it translates an LLP (or other operational envelope) into executable actions such as orchestrating computing workloads and coordinating on-site resources to keep a facility within the Commission-approved import limits, while producing auditable compliance records for customer and IOU review.

Accordingly, Emerald AI recommends the Commission clarify in the Ordering Paragraphs and/or the Implementation Advice Letter that "Power Control System" requirements may be satisfied through software-based controls, so long as the customer demonstrates reliable compliance with the LLP and meets any applicable safety and commissioning requirements.

E. Support Machine-Readable LLP Schedule Delivery and Clarify that Software-Based Controls Can Qualify for "Mutually Agreeable" Safe Harbor Pathways

Emerald AI supports the Proposed Decision's direction that IOUs provide LLP values electronically in a standardized format. For large loads that rely on automated operational management—particularly modern data centers—machine-readable LLP schedules are essential to ensuring reliable compliance, auditability, and rapid integration into customer control systems.

Emerald AI further supports the Proposed Decision's concept of "safe harbor" treatment for load controlled by certified or approved electronic systems, including UL 3141 PCS-enabled equipment, and the allowance for other mutually agreeable control systems where UL 3141-certified equipment is unavailable or infeasible. To preserve the Commission's stated technology-neutral approach, Emerald AI recommends the Commission clarify that "mutually agreeable" control systems may include software-based control solutions, so long as the import limitation function is verified and, where required, commissioned to the IOU's satisfaction.

This clarification will ensure that the Standard Offer remains scalable and does not inadvertently exclude modern, software-defined control approaches that can provide verifiable compliance with LLP import limits.

Emerald AI also notes that the Proposed Decision's discussion allows safe harbor pathways where UL 3141-certified equipment is unavailable or infeasible, subject to verification and, where applicable, commissioning. Emerald AI recommends that the tariff language implementing "controlled load" (including any additions to Tariff Rules 2 and 3) be drafted to reflect that flexibility so that safe harbor treatment is not inadvertently limited only to UL 3141-certified PCS hardware where functionally equivalent import-limiting controls, including software-based control solutions, are verified.

F. Improve Transparency and Predictability Through Standardized Preliminary Capacity Assessments and Clear Eligibility Guidance

The Proposed Decision identifies as a core issue "whether to formalize and align preliminary capacity assessment requirements" and notes that preliminary capacity assessments allow customers to understand available power at a point on the grid.[14]

Emerald AI supports the Proposed Decision's direction to improve transparency and predictability through standardized preliminary capacity assessments, clear eligibility guidance, and alignment across PG&E and SCE, including recognition that capacity constraints can arise at locations other than the circuit level and may involve service and upstream constraints.[15]

Emerald AI also supports the Proposed Decision's direction to formalize preliminary capacity assessment offerings within a tariffed option and to establish a target timeline for delivery of results. For large loads making site-selection and investment decisions, timely Step 0 information materially reduces avoidable development costs and helps steer projects toward grid-ready locations.

Emerald AI also supports the Proposed Decision's direction that IOUs ask Standard Offer customers whether they prefer LLP optimization for maximum power or minimum daily energy and recommends that this preference be explicitly captured in customer-facing materials and in the Implementation Advice Letter process description.

To implement these principles, Emerald AI recommends that the IOUs' web pages and application materials (including the Standard Offer checkbox and related disclosures) provide customers clear, plain-language information on: (1) where constraints exist (distribution vs. upstream), (2) the expected duration of the LLP, (3) the process for revising the LLP as constraints change, and (4) the consequences of exceedances and cure opportunities.

G. Strengthen Data Collection to Enable Rapid Refinement of the Standard Offer and Quantify Benefits

Emerald AI supports the Proposed Decision's requirement that PG&E and SCE collect and report Standard Offer data (including the minimum fields in Appendix C) to support refinement, scalability, and evaluation.

To ensure the Commission can evaluate whether the Standard Offer is achieving its objectives and identify process bottlenecks, Emerald AI recommends adding the following data fields to Appendix C (or otherwise requiring their reporting through the Energy Division's finalization process): (1) days from a complete application to the initial customer load-limit conversation; (2) days from final LLP determination to delivery of the electronic LLP schedule file and Standard

[14] Proposed Decision at 6–7

[15] Proposed Decision at 20

Offer agreement; (3) whether the LLP was optimized for power or energy; and (4) whether the customer requested a 24-value LLP option (and whether granted), including incremental customer-paid study cost where applicable.

H. Targeted Implementation Clarifications for Large Load Participation

Emerald AI recommends that the IOUs' Implementation Advice Letter and implementing tariff sheets (as applicable) include clear, standardized provisions that reduce customer uncertainty and support scalable participation, including for large loads whose internal controls may be software-based.

- Confirm that customers may propose alternative control and compliance approaches, subject to IOU approval, consistent with the Proposed Decision's recognition that customers may have "an alternative method of controlling their load. In particular, confirm that customers may use software-based controls as a valid 'mutually agreeable solution' for Safe Harbor treatment (per Proposed Decision Section 6.3.3), provided the customer can demonstrate the software's ability to maintain the Limited Load Profile (LLP).

- Provide standardized LLP templates (including time-of-day schedules and ramp constraints), and clear procedures for updating LLPs as constraints change or upgrades are completed.

- Clearly describe exceedance consequences, cure periods, and escalation steps so customers can manage operational risk and plan investments.

- Adopt the clarifying edits to Appendix B (web pages) and the Ordering Paragraphs described in Section I.2 below to ensure consistent customer-facing transparency and enforceability.

I. Proposed Clarifying Edits to Appendix B (Web Pages) and Ordering Paragraphs

Emerald AI respectfully offers the following targeted clarifications to improve consistency, customer understanding, and enforceability, while remaining fully consistent with the Proposed Decision's Standard Offer Static FSC framework.

1. Appendix B – Minimum Topics to be Addressed on IOU Application Web Pages

Emerald AI proposes that the Commission clarify that the Appendix B topics should include, at a minimum, the following implementation details (shown here as additions/expansions to the existing bullets):

- **Description and definition of LLP:** include whether LLP values vary by season/time-of-day (interval-based kW limits), whether ramp constraints apply, and how customers request annual and ad hoc LLP reviews.
- **Benefits to the customer / Impact on energization timeline:** include that the Standard Offer is a temporary "bridge-to-wires" pathway intended to enable earlier energization while upgrades are pending, and explain how/when transition to full service occurs.

- **Potential challenges to the customer / Estimation of customer-side costs:** include customer-side implementation considerations for complying with LLPs (including load management systems) and how exceedances are handled (education-first where safety/reliability is not implicated).
- **Description of technologies (e.g., PCS) relevant to operating under an LLP:** clarify that customers may use technology-neutral methods (hardware, software, or hybrid) to comply with LLP import limits; and clarify that on-site resources (e.g., storage or generation) may be used to maintain net import within the LLP, consistent with applicable tariffs and interconnection requirements.
- **Description of how the utility will enroll customers in FSC / eligibility:** include plain-language guidance on where constraints can arise (service, circuit, upstream), expected duration of the FSC, and how LLP schedules and revisions will be delivered (including the standardized electronic format).

2. Ordering Paragraphs – Proposed Clarifying Edits

Emerald AI proposes the following targeted clarifications to improve consistency, customer understanding, and enforceability, while remaining consistent with the Proposed Decision.

- **Ordering Paragraph 1 (Implementation Advice Letter / Standard Offer Tariff):** Clarify that the joint Tier 2 Advice Letter implementing the Standard Offer shall include: (i) a standardized LLP schedule template that satisfies the minimum granularity requirements described in the Proposed Decision and a clear LLP revision process (including annual and ad hoc reviews where applicable); (ii) a clear exceedance response framework consistent with the Proposed Decision's direction to use customer education as the first remediation step when safety/reliability is not implicated; and (iii) clear confirmation that customers may use technology-neutral control methods—including software-based controls—to comply with the LLP, subject only to any commissioning or verification requirements necessary to obtain "safe harbor" treatment for uncertified systems.

- **Ordering Paragraph 2 and Appendices D–E (Tariff Rule 2/3 language):** Clarify that the definition of "controlled load" and any associated "safe harbor" treatment is available not only for UL 3141-certified PCS-enabled equipment, but also for other mutually agreeable control systems (including software-based controls) where the import limitation function is verified and, where required, commissioned, consistent with the Proposed Decision.

- **Ordering Paragraph 4 and Appendix C (data reporting in biannual reports):** Add time-to-process metrics necessary to evaluate scalability, including: (i) days from a complete application to the initial load-limit conversation; (ii) days from final LLP determination to delivery of the LLP schedule file and Standard Offer agreement; and (iii) whether the customer requested (and paid for, if applicable) a 24-value LLP option and whether the LLP was optimized for power or energy (as contemplated by the Proposed Decision).

- **Ordering Paragraph 6 (Preliminary Capacity Assessment tariff):** Clarify that the PCA Advice Letter should require customer-facing disclosures to state expected turnaround times, customer costs, and clear limitations (i.e., that PCA results are non-binding and subject to change after detailed engineering).

III. CONCLUSION

For the reasons stated above, Emerald AI respectfully requests that the Commission adopt the Proposed Decision and incorporate targeted clarifications that: (1) preserve technology neutrality for customer controls (including software-based controls) so long as customers can reliably comply with their LLP; (2) strengthen customer-facing transparency and implementation consistency through the Appendix B and Ordering Paragraph clarifications described above; and (3) ensure reporting and data collection enables rapid refinement of the Standard Offer and quantification of benefits for customers and ratepayers.

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Respectfully submitted,

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