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Order Instituting Rulemaking to Modernize the Electric Grid for a High Distributed Energy Resources Future.	Rulemaking 21-06-017 (Filed July 2, 2021)

ENVIRONMENTAL DEFENSE FUND COMMENTS ON ASSIGNED COMMISSIONER'S PROPOSAL

/s/ Casey Horan
Attorney, Electrification
Environmental Defense Fund
123 Mission St, 18th Floor
San Francisco, CA 94105
Telephone: (212) 624-8888
choran@edf.org

/s/ Cole Jermyn
Senior Attorney, Clean Affordable Power
Environmental Defense Fund
123 Mission St, 18th Floor
San Francisco, CA 94105
Telephone: (202) 572-3523
cjermyn@edf.org

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I. INTRODUCTION

On July 7, 2026, the Assigned Commissioner and Administrative Law Judge issued the *Assigned Commissioner's and Administrative Law Judge's Ruling Requesting Comment on Assigned Commissioner's Proposal on Flexible Service Connections* ("Proposal").[1] The Proposal seeks comment on a framework designed to enable and scale Flexible Service Connections ("FSCs") to the distribution grid while maintaining system reliability, preserving operational flexibility, and making more efficient use of existing grid capacity. The ruling established a schedule providing parties fourteen days to submit responses to the ruling questions and twenty-one days to submit reply comments. Subsequently, the Commission issued an *Email Ruling Granting Schedule Modification*, extending the deadline for initial comments to July 27, 2026, and the deadline for reply comments to July 31, 2026. Thus, these comments are timely filed.

EDF broadly supports the Proposal and appreciates the Commission's continued leadership in advancing FSCs as a practical and scalable tool to accelerate faster energization, improve utilization of existing distribution system infrastructure, and defer and/or avoid unnecessary and costly grid upgrades. EDF's responses to the Commission's specific questions are provided below.

II. DISCUSSION

In response to the Assigned Commissioner's Questions on Proposal[2], EDF offers the following:

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)*

Overall, EDF supports the direction of the Proposal and many of its recommendations, and commends the Commission on its ongoing efforts to progress flexible solutions in California. EDF

[1] R. 21-06-017, *Order Instituting Rulemaking to Modernize the Electric Grid for a High Distributed Energy Resources Future*, Assigned Commissioner's and Administrative Law Judge's Ruling Requesting Comment on Assigned Commissioner's Proposal on Flexible Service Connections (July 7, 2026). [hereinafter "Proposal"].
[2] *Id*. at 3-4.

provides more detailed feedback on the Proposal's specific recommendations in response to Question 2 below. In particular, EDF strongly supports the evolution of FSCs from being treated solely as temporary bridging solutions for energization delays to being developed as longer-term tools for improving affordability, increasing customer choice, and informing more efficient distribution system planning. As load growth continues to accelerate in the state, utilities will increasingly need flexible solutions for customers while making better use of existing infrastructure and deferring unnecessary capital expenditures both near- and long-term.

EDF also supports the Proposal's efforts to encourage greater innovation and consistency across IOUs, particularly by directing SDG&E and SCE to pursue the same level of innovation that PG&E has demonstrated in developing and deploying its flexible interconnection offerings through its Flex Connect program. EDF further supports exploring a range of low-cost and readily deployable operational tools that can facilitate different FSCs, recognizing that utilities may require a range of solutions to address varying grid conditions and customer needs. In addition, EDF supports the recommendations for additional workshops and stakeholder engagement to further refine implementation details and build consensus around key policy and technical issues.

At the same time, EDF recommends several clarifications and modifications to ensure that the Proposal's implementation remains scalable, equitable, and cost-effective. In particular, the Commission should avoid prescribing any single technological pathway and instead focus on establishing requirements that allow utilities to deploy the most appropriate solutions for their individual systems. EDF also encourages the Commission to maintain flexibility regarding operational approaches, including consideration of solutions that do not require immediate deployment of advanced distributed energy resource management systems ("DERMS") where lower-cost alternatives may achieve similar outcomes.

Finally, as FSCs evolve from a near-term interconnection tool into a potentially long-term customer service option, the Commission will need to devote significant attention to the development of appropriate pricing/economic signals, compensation mechanisms, and customer protections. Customers who elect to accept operating constraints should receive transparent information regarding the nature and duration of those constraints and, where appropriate, compensation structures that reflect the value they provide to the distribution system. Establishing these market and regulatory frameworks each of these points of feedback in more detail in its response to Question 2 below.

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.*

EDF provides the following feedback on a selection of the recommendations set out in the Proposal.

Section 3.1: Extension of Standard Offer to SDG&E customers

EDF supports directing SDG&E to establish a Standard Offer FSC program consistent with that adopted for PG&E and SCE in D.26-02-025.[3] While the Commission initially required PG&E and SCE to develop standard-offer FSC programs in response to documented energization delays, SDG&E was not subject to the same requirement.[4] The objectives underlying the High DER proceeding and this Proposal, however, extend well beyond simply addressing energization delays. They are fundamentally focused on reducing ratepayer costs, accelerating customer access to grid benefits, and optimizing the use of existing distribution infrastructure. Those objectives are equally applicable within SDG&E's service territory and support providing SDG&E customers access to the same flexible opportunities available elsewhere in California.

Although SDG&E may contend that it currently faces fewer distribution constraints or lacks some of the advanced operational capabilities available to the larger IOUs, these distinctions do not justify excluding its customers from the benefits of FSCs. SDG&E is expected to experience substantial load growth in the coming years as transportation electrification, building electrification, and large commercial and industrial loads continue to expand. As these trends accelerate, SDG&E will confront the same fundamental challenges as the other IOUs. Establishing a standardized FSC framework now will enable SDG&E to proactively manage emerging constraints and provide customers with additional interconnection pathways before capacity limitations become significantly worse.

Importantly, these challenges are not hypothetical. Continued electrification and load growth will almost certainly require SDG&E to develop new tools and processes for managing

[3] R. 24-01-018, *Order Instituting Rulemaking to Establish Energization Timelines*, Decision Establishing a Standard Offer for Flexible Interconnection, D. 26-02-025 (Feb. 5, 2026).
[4] *Id*.

constraints. The question is not whether SDG&E will need to address these issues, but whether it will do so proactively or reactively. Developing FSC capabilities today allows SDG&E to build operational experience, refine its practices, and provide customer benefits before interconnection delays and upgrade costs become more acute and costly.

Moreover, the Commission should continue to reject any argument that implementation of FSCs requires the most sophisticated new control systems, advanced DERMS, or other significant technological investments as a prerequisite. As demonstrated by the Commission's existing Standard Offer FSC framework and PG&E's "trust-but-verify" approach, FSCs can be deployed using relatively simple, low-tech approaches, where customers agree to operate within specified service limits while utilities use existing advanced metering infrastructure ("AMI") and established enforcement mechanisms to monitor compliance. In other words, FSCs can be implemented today using tools that are already readily available to utilities.

For these reasons, EDF supports directing SDG&E to develop and implement a Standard Offer FSC program that is substantially similar to those adopted for PG&E and SCE. Doing so would ensure consistent treatment of customers across the state's IOUs, expand access to lower-cost interconnection pathways, and improve utilization of existing distribution assets. Absent a more compelling showing that FSCs are unworkable in SDG&E's territory, there is little justification for denying SDG&E customers access to a tool that the Commission has already determined can reduce costs, accelerate service, and make more efficient use of the grid.

Section 3.4: Flexible connection evaluation requirements

The Proposal recommends that before initiating a ratepayer-funded distribution upgrade, each IOU must evaluate whether a Limited Power arrangement, Operating Envelope, or other flexible connection solution enabled by PCS can be used as a mitigation to safely satisfy the customer's requested capacity.[5] EDF supports this recommendation because it appropriately requires utilities to consider flexible solutions before undertaking ratepayer-funded distribution upgrades. Evaluating Limited Operating Arrangements, Operating Envelopes, and other flexible connection options enabled by PCS can help utilities optimize use of existing infrastructure, reduce customer and ratepayer costs, and accelerate customer access to service while maintaining safe and reliable operations. Requiring utilities to assess these alternatives before proceeding with

[5] Proposal at 46.

traditional infrastructure investments is consistent with the Commission's broader objective of pursuing lower-cost, non-wires solutions where feasible and ensuring that distribution upgrades are undertaken only when necessary.

At the same time, the Commission should clarify the meaning of the term "associated customer." As drafted, it is unclear whether the term refers only to the customer directly requesting service, other customers located on the same constrained portion of the system, or a broader class of customers that may benefit from capacity made available through a flexible interconnection arrangement. EDF recommends that the Commission adopt the following definition: an associated customer should include not only the customer that triggers a required grid upgrade, but also any customer whose energization is dependent on the completion of that upgrade, regardless of whether the upgrade is newly identified, already planned, or currently underway. Clarifying the term in this manner would better reflect the practical realities of utility planning and interconnection processes, while ensuring that flexible connection alternatives are evaluated whenever they could accelerate customer energization. A clearer definition will be important to ensure consistent implementation across utilities, avoid disputes regarding applicability, and provide transparency regarding when the requirement to evaluate flexible connection alternatives is triggered.

Section 4.1: Large IOUs to provide Limited Power arrangements as the default mitigation for distribution transformer upgrades

The Proposal makes two recommendations with respect to UL 3141-certified power control systems ("PCS"): 1) The large IOUs should "incorporate Limited Power implemented by certified UL 3141 devices as the default mitigation for distribution transformer or secondary conductor upgrades,"[6] and 2) customers implementing the non-bridging standard offer should be required to use UL 3141 PCS.[7] EDF supports these recommendations with modifications.

Regarding the first recommendation, EDF agrees that Limited Power should serve as the default mitigation for these upgrade needs. But, the proposal should specify that any consideration of Limited Power as a mitigation tool by the large IOUs should account for the potentially significant upfront cost to customers of installing UL 3141-certified PCS and who should cover

[6] Proposal at 47.
[7] *Id.* at 54.

these costs. Distribution transformer and secondary conductor upgrades could incur costs for the triggering customer, socialized costs for all ratepayers, or both. Where a PCS is used to avoid this upgrade need, therefore, both triggering customers and ratepayers broadly may benefit. To reflect this, the cost of these systems should not be the sole responsibility of the triggering customer where ratepayers would be responsible for some or all of the cost of the identified upgrade. EDF recommends the Commission direct the utilities to propose a cost allocation framework for these costs as part of the advice letter called for by the Proposal.

Regarding the second recommendation, EDF supports a requirement that UL 3141-certified PCS be required for the non-bridging standard offer if there is sufficient demonstration of available PCS products to meet this requirement. As the Commission highlighted in its order establishing the standard offer, "Multiple parties note that there may be cases in which a specific equipment is not available with a UL 3141 PCS…."[8] Given the early stage of market development for certified products, the Commission supported a flexible solution that allows customers and utilities to use mutually agreeable solutions where a certified PCS is "unavailable or infeasible for the customer's needs."[9] The same provision should apply here. Where a PCS solution does not exist or is not feasible for a specific customer's needs, that customer should not be entirely excluded from participating in a non-bridging solution if there is alternative the customer and utility can agree on. The utilities should propose as part of their FSC Implementation advice letter the process by which customers and their utility can agree to alternative solutions.

Section 4.2: SCE and SDG&E to implement Variable Operating Envelope bridging solutions modeled after PG&E's Flex Connect

EDF agrees that SDG&E and SCE should be required to implement variable operating envelope ("VOE") bridging solutions. As defined in the proposal, VOE solutions include essentially "day-ahead" forecasting.[10] PG&E is already offering this type of FSC through Flex Connect. Moreover, the Commission should consider whether, and under what conditions, VOE options could be deployed without a sophisticated DERMS. As IREC noted in its previous comments, a program modeled on Australia's flexible interconnection framework could provide a

[8] R.24-01-018, *Order Instituting Rulemaking to Establish Energization Timelines*, Decision Establishing a Standard Offer for Flexible Service Connections at 51, D. 26-02-025 (Feb. 10, 2026).
[9] *Id.*
[10] Proposal at 22.

practical near-term pathway for enabling managed variability while avoiding the need for immediate DERMS deployment.[11]

Section 4.4. SCE and SDG&E should implement Grid Edge DERMS for 100 A residential customers whose EV charging would normally require an upgrade

The Proposal recommends that "SCE and SDG&E should implement Grid Edge DERMS for 100A Residential Customers whose EV charging would normally require an upgrade."[12] In making this recommendation, the Proposal points to PG&E's ChargeBoost pilot, which relies on AMI 2.0 meters to help customers installing EV charging avoid panel and service upgrades.[13]

EDF supports this proposal, but emphasizes that technology-neutral implementation is critical for solutions like this to meaningfully scale. Currently, the ChargeBoost pilot lists only a single model of EV charger that participating customers can use, and states that "[a]dditional compatible EV charger options may be added over time."[14] This may be reasonable for an EPIC pilot like ChargeBoost, but is not appropriate for a scaled program intended to represent a regular deferral option. To address this, the Proposal's requirement should be paired with clear, technology-neutral criteria for equipment eligibility for all of the large IOUs. The utilities should propose this criteria as part of the Tier 2 Gride Edge DERMS advice letter.

Section 4.5: Establish a series of Energy Division-led workshops with reports to further develop Grid Edge DERMS solutions

EDF supports this recommendation, as cybersecurity considerations will become increasingly important as utilities deploy more flexible offerings, operating envelopes, and customer-side technologies to manage distribution system constraints. Establishing a dedicated workshop process and requiring follow-up implementation filings will help ensure that cybersecurity requirements are developed transparently, consistently, and with input from a broad range of stakeholders. EDF also supports leveraging the expertise and recommendations of the

[11] R. 21-06-017, *Order Instituting Rulemaking to Establish Energization Timelines*, Opening Comments of the Interstate Renewable Energy Council on ALJ Ruling Seeking Additional Information on DER Enabled Near Term Flexible Connections at 4-5 (Dec. 19, 2025).
[12] Proposal at 48.
[13] *Id.* at 31.
[14] *See* PG&E, ChargeBoost, https://www.pge.com/en/clean-energy/electric-vehicles/getting-started-with-electric-vehicles/chargeboost.html.

SIOWG to identify practical cybersecurity safeguards that protect grid reliability without creating unnecessary barriers to customer participation or innovation. A collaborative process will help ensure that cybersecurity requirements are appropriately tailored to the risks posed by FSCs while remaining scalable and cost-effective.

Section 6.1: Establish durable non-bridging solutions for new flexible connections

EDF supports this recommendation as a means of providing PG&E and SCE's customers with greater flexibility and choice in how they manage interconnection constraints over time. As utilities gain experience with flexible service offerings, it is appropriate to allow customers to transition from temporary bridging arrangements to long-term non-bridging solutions, especially where doing so can continue to avoid or defer costly infrastructure upgrades. Expanding these options can help maximize utilization of existing distribution infrastructure, accelerate customer access to service, and provide a more durable pathway for customers that are willing to accept ongoing operating constraints.

At the same time, as FSCs evolve from temporary accommodations into persistent service offerings, the Commission should further consider the compensation and pricing frameworks that will apply to participating customers. Customers that agree to accept long-term limitations on their service may provide meaningful value to the grid by reducing upgrade costs and increasing system utilization and flexibility, and the Commission should ensure that any long-term FSC framework appropriately reflects those benefits through transparent and equitable compensation mechanisms.

Section 6.2: Clarification that current Static and Variable Operating Envelope customers can elect to transition from a bridging to a persistent non-bridging solution

EDF supports this recommendation, but suggests modifying the proposal to allow customers more flexibility to transition to non-bridging solutions beyond the 45 days after presentation of design proposed.[15] There may be situations where a customer elects a bridging solution, begins service under that solution, and ultimately determine they are able to continue service under that FSC indefinitely. Even if their utility is completing system upgrades that would have been needed to transition that customer off of their bridging FSC, those upgrades may be able to serve other new loads if the first customer remains on their FSC. In a situation where that

[15] Proposal at 52.

additional capacity is already in demand from other customers, the first customer should be able to transition to a non-bridging FSC without paying their share of grid upgrade costs. If that additional capacity is not yet in demand from other customers, the first customer should still be allow to switch to non-bridging, and should be responsible for their share of upgrade costs subject to reimbursement if that capacity is subsequently used by one or more other customers.

Section 6.3: PG&E should formalize its Flex Connect offering and expand its non-bridging Flex Connect Generation option to load customers:

EDF supports this recommendation because Flex Connect has demonstrated that variable interconnection solutions can work well in California. The program has shown that FSCs can be scaled and adapted to accommodate a range of customer types and system conditions, helping connect load and generation resources more quickly and cost-effectively than traditional infrastructure-driven solutions alone. PG&E has already invested in the operational processes, DERMS capabilities, and technical expertise necessary to administer Flex Connect, making it well positioned to formalize the program and expand its availability.

Extending the non-bridging Flex Connect model to load customers would also build on an existing successful framework, provide customers with additional interconnection options, and further the Commission's goals of reducing infrastructure costs, accelerating customer access to service, and maximizing the use of existing distribution assets. Given PG&E's demonstrated experience with the program, EDF sees little reason to limit Flex Connect to generation resources when the same underlying approach could provide meaningful benefits to load customers.

Section 6.4: Large IOUs should be required to implement a non-bridging version of the Standard Offer

For the same reasons discussed in response to the recommendation above, EDF supports directing the large IOUs to implement a non-bridging version of the Standard Offer. Non-bridging arrangements may be particularly attractive for customers whose load profiles can be readily managed during constrained periods. For example, EV fleet operators that primarily charge overnight, commercial buildings with on-site solar and storage, and other customers with significant load flexibility may be well positioned to operate successfully under narrowly tailored operating constraints. Providing these customers with the option to accept reasonable limitations

in exchange for earlier energization service can unlock capacity that would otherwise remain unavailable until upgrades are completed. At the same time, the Commission should ensure that non-bridging solutions are paired with appropriate compensation structures that reflect the value these customers provide to the grid as a whole.

Section 7.1 Interoperability and Customer Choice Requirements

EDF supports directing IOUs to default customers on Variable or Dynamic Operating Envelopes to real-time pricing rates because these customers are already participating in service arrangements that reflect changing grid conditions and available system capacity. Moreover, aligning FSC offerings with dynamic price signals can encourage customers to shift consumption away from constrained periods, reduce the frequency and severity of operating restrictions, and increase the overall value and customer participation in FSC programs. In many cases, customers may be able to respond more efficiently to price signals than to direct operational constraints alone, allowing the distribution system to accommodate additional load while making better use of existing infrastructure. Pairing dynamic operating envelopes with dynamic rates therefore represents a logical and complementary approach to managing distribution system constraints.

That said, the Commission should ensure that the transition to real-time pricing structures does not inadvertently disrupt existing rate designs that already provide valuable customer incentives and planning certainty. For example, PG&E's current commercial EV charging rate combines a subscription-based demand charge with time-of-use ("TOU") energy pricing. EDF recommends that the Commission clarify that any default real-time pricing requirements should not impact customer's ability to access specific rate designs such as these subscription rates. Maintaining these demand charge subscription options can provide customers, particularly EV fleet operators, with greater cost certainty and support long-term infrastructure investment decisions, while still exposing customers to dynamic energy price signals that encourage grid-responsive charging behavior.

EDF also supports the requirement that IOUs track and report relevant data associated with these programs. As the Commission considers whether and how to expand the use of Variable and Dynamic Operating Envelopes over time, it will be important to understand how customers respond to real-time price signals, the extent to which dynamic rates reduce system constraints, and whether the combination of flexible service and dynamic pricing produces measurable benefits

for customers and ratepayers. This information can help inform future program design, identify best practices, and ensure that flexible service offerings remain cost-effective and customer-focused. At the same time, as discussed more below in response to Question 3, the Commission should continue to evaluate whether the compensation and rate structures associated with long-term flexible service arrangements appropriately reflect the value that participating customers provide to the grid through their operational flexibility.

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?*

EDF recommends that the Commission evaluates and ultimately develops compensation mechanisms for customers participating in long-term non-bridging FSCs. Customers that accept ongoing operational limitations, modify load shapes, or otherwise provide flexibility to help manage distribution system constraints are delivering a valuable grid service. In many cases, these customers enable more efficient utilization of existing infrastructure, reduce congestion, defer or avoid costly distribution upgrades, and create capacity that can be used to serve additional customers. As FSC programs mature, the Commission should ensure that the value provided by these customers is appropriately recognized and compensated.

While the immediate priority should be to expand access to flexible interconnection options and gain operational experience with these programs, compensation frameworks will become increasingly important where non-bridging arrangements persist over extended periods. Absent a clear pathway for compensation, customers may be asked to bear ongoing operational constraints without sharing in the system benefits they create. The Commission should therefore assess potential compensation approaches, including mechanisms tied to avoided infrastructure investments, congestion relief, capacity value, or other measurable grid benefits. Establishing a long-term framework for compensating flexibility services will help ensure that FSC programs remain equitable, attract voluntary participation, and support a durable market-based approach to managing distribution system constraints.

Currently, different customers may have varying incentives or disincentives to elect bridging solutions. For example, non-residential EV charging customers do not pay for utility-side make-ready costs following the implementation of Assembly Bill ("AB") 841, costs that may be

paid if they were a different type of non-residential load. As the Commission reassesses its policy over coverage of utility-side make-ready costs for EV charging, it should consider how its cost allocation approach could be used to encourage greater use of non-bridging FSCs.

III. CONCLUSION

EDF thanks the Commission for the opportunity to provide these comments.

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Respectfully submitted,

/s/ Casey Horan
Attorney, Electrification
Environmental Defense Fund
123 Mission St, 18th Floor
San Francisco, CA 94105
Telephone: (212) 624-8888
choran@edf.org

/s/ Cole Jermyn
Senior Attorney, Clean Affordable Power
Environmental Defense Fund
123 Mission St, 18th Floor
San Francisco, CA 94105
Telephone: (202) 572-3523
cjermyn@edf.org