UNITED STATES OF AMERICA

BEFORE THE

FEDERAL ENERGY REGULATORY COMMISSION

Interconnection of Large Loads to the	**)**	**Docket No. RM26-4-000**
Interstate Transmission System	**)**	

REPLY COMMENTS OF CRITICAL LOOP, INC

Critical Loop, Inc. ("Critical Loop") respectfully submits these reply comments in the above-captioned proceeding concerning the interconnection of large loads to the interstate transmission system.

I. INTRODUCTION AND APPRECIATION FOR DOE AND FERC

Critical Loop appreciates the Secretary of Energy's use of his authority under Section 403 of the Department of Energy Organization Act to initiate this timely and consequential proceeding and commends the Commission for acting on that directive. DOE's request seeks an answer to how the United States can simultaneously win the AI and advanced computing race, keep electricity affordable for households and businesses, and preserve reliability and resource adequacy in every region. It is natural that this challenge should proceed from DOE, given its innovation mission, which has historically generated substantial returns for the American economy and which we expect this effort will continue.

The Commission's technical expertise and its jurisdiction over interstate transmission and wholesale markets make FERC the appropriate forum to design durable, non-discriminatory rules for large-load interconnection. Critical Loop also appreciates the thoughtful comments filed by states, RTOs and ISOs, utilities, consumer advocates, industrial customers, data centers, technology companies, and storage and generation developers.

In its initial comments, Critical Loop proposed a Large-Load Flexibility Commitment ("LLFC") construct that would allow large loads to interconnect faster when they commit to enforceable operating envelopes supported by on-site or adjacent resources, backed by telemetry, verification, and non-performance provisions. Critical Loop has deployed this paradigm on the distribution grid and strongly supports its application on the transmission system for large loads.

Critical Loop believes this is the most significant energy-policy issue facing the country today because it will help determine whether the United States maintains its competitive advantage in AI, advanced manufacturing, semiconductors, clean energy, and other strategic sectors. These reply comments build on Critical Loop's initial LLFC proposal, respond to themes raised by other commenters, and reflect the growing body of analysis and experience with flexible large-load service.

II. THE LARGE-LOAD INTERCONNECTION CHALLENGE

A. Explosive new demand from large loads

The record confirms that, after roughly two decades of relatively flat load growth, the grid is now facing an unprecedented surge in demand from large loads such as high-density AI factories, cloud and quantum computing, crypto and other compute-intensive digital infrastructure, as well as transportation and building electrification, and reshoring of industry including semiconductor fabrication and other power-intensive industrial processes. Commenters across the spectrum describe a three-way "Gordian knot": meeting the demand from these new loads, keeping the grid reliable through heat waves, winter peaks, and periods of low renewable output, and keeping power affordable and rates just and reasonable for all customers. The traditional engineering tradeoff between performance, timeline, and cost is at the heart of the matter.

B. Time-to-power and the two bottlenecks

While stakeholders understandably debate jurisdiction, size thresholds, and cost allocation, there is broad practical agreement on the central fact that for many large loads, time-to-power is the binding constraint. Interconnection queues are severely backlogged, and new transmission and generation are often contentious to permit and develop. For AI and other digital infrastructure in particular, standard interconnection timelines may mean losing ground to global competitors. We advocate for an alternative: a clear framework that allows large loads to manage to the constraints on the grid as it stands so that capital and markets can form to relieve bottlenecks and bring this new load online faster than utilities or regulators in their traditional planning capacity are able to.

In practice, the time-to-power problem reflects two distinct but overlapping bottlenecks. First, transmission facilities at the relevant voltage levels may not have enough headroom to provide full firm service to a new large load without upgrades. Second, the balancing authority or load-serving entity may not have sufficient accredited generation capacity to provide additional firm service while maintaining resource-adequacy margins. Under traditional approaches, a project may have to wait for both new wires and new capacity to be built before it can be fully energized.

C. Why co-location, flexible connections, and "bring your own capacity" are taking off

It is precisely this time pressure that is driving co-location and behind-the-meter strategies. Data centers and other large loads increasingly connect directly to existing power plants or to co-located generation and storage, and pair those sources with on-site battery energy storage and control systems that cap net withdrawals, provide ride-through capability, and allow operation within constrained envelopes while transmission upgrades catch up.

The challenge for this proceeding is to recognize and integrate these emerging arrangements into a transparent, non-discriminatory framework. An LLFC-style flexible connection can address the transmission bottleneck by defining a mix of firm and conditional service within an operating envelope, while complementary "bring your own capacity" mechanisms can address the generation bottleneck by ensuring that the firm portion of the load is backed by accredited capacity paid for by the customer.

III. SUMMARY OF THE RECORD TO DATE

A. Breadth of perspectives

The docket reflects a broad and diverse set of views. Commenters include investor-owned, cooperative, and municipal utilities, independent power producers and project developers, data-center and technology companies, trade associations, state public utility commissions and other state and tribal governments, RTOs and ISOs, and state consumer advocates and attorneys general. This breadth is a strength, because the record reflects the perspectives of both those who build and operate the grid and those who depend on it for investment and economic growth.

Commenters share important areas of agreement that align with Critical Loop's initial comments, including the need for timely and orderly interconnection of large loads, the central role of flexibility and co-located resources, and the importance of cost-causation principles.

B. FERC's role and state jurisdiction

Many commenters express support for FERC adopting a standardized large-load interconnection framework while emphasizing that the Commission should not unduly preempt state authority over retail ratemaking and retail contracts, resource-adequacy obligations and integrated resource planning, or siting and local distribution service. State commissions and regional state organizations stress the need for a cooperative federalism approach in which FERC establishes clear, transmission-focused rules for large-load interconnections and states retain control over retail service, distribution-level interconnections, and integrated resource planning.

C. Co-location and behind-the-meter resources

Most commenters also support rules that explicitly recognize co-located generation and storage when those resources are physically proximate to and under coordinated control with the large load. They view such co-location as a key part of the solution to time-to-power challenges, provided that co-located resources and loads are studied together and that the resulting configurations do not unduly stress transmission facilities or undermine system stability and reliability.

D. Flexibility and curtailable large loads

Many utilities, RTOs and ISOs, and data-center and industrial customers support voluntary, tariff-backed frameworks for flexible or curtailable large loads, often tied to real-time telemetry and enforceable contracts. Several state commissions explain that they already use tools such as curtailment protocols, interruptible tariffs, and minimum contract commitments to enable faster connections without burdening other customers. For example, the Maryland Public Service Commission discusses rules for curtailable and dispatchable service, the Pennsylvania Public Utility Commission describes its use of flexibility, curtailment, and demand response in planning and retail rate design, and the Georgia Public Service Commission highlights opportunities for load flexibility in the context of data-center-driven growth and associated generation investment.

At the same time, RTOs and ISOs and several state commissions caution that flexibility cannot simply be assumed. It must be backed by enforceable rights and obligations and must be properly incorporated into planning and reliability analyses. Critical Loop's proposed LLFC construct is squarely in this conversation, and we see substantial alignment between LLFC-style commitments and other commenters' calls for standardized, enforceable flexibility frameworks.

IV. THEMES WE WISH TO CLARIFY IN LIGHT OF OTHER COMMENTS

A. Cost causation and the value of flexible, high-load-factor customers

Across diverse perspectives, there is widespread agreement that large loads should cover the incremental costs they cause for transmission upgrades, interconnection, and, in many states, associated generation capacity. Commenters emphasize that costs should follow the cost causation principle and that existing customers should be protected from unjust cross-subsidies and stranded-asset risk.

Several large-load customers, including Google LLC, argue that transmission and interconnection charges for co-located load and generation should be based on net withdrawals and actual system usage, rather than singling out new loads to bear costs that are not uniquely caused by their service. Utilities and industrial customers echo this emphasis on aligning transmission charges with flows and net demand rather than simple nameplate capacity.

Critical Loop agrees with others who promote a cost-causation framework in which large loads are expected to pay for the marginal costs they create, however, we point out that when a large load accepts a flexible connection and procures or brings capacity sufficient to meet its firm service, it is effectively internalizing much of the marginal cost of its interconnection. The incremental capacity needed to support the firm portion of the load is acquired and paid for by the customer, and the conditional portion operates within an agreed envelope that is explicitly modeled in studies. This creates a structure in which the combination of flexible interconnection and customer-funded capacity may be close cost-neutral.

Additionally, because large loads often operate at higher load factors than the system average, these customers can improve utilization of existing transmission and generation assets. Fixed costs are then recovered over a larger volume of energy sales, which can put downward pressure on average rates over time.

Properly structured then, large loads are not merely cost drivers. They can be part of the energy affordability solution. A fair and just interconnection framework would recognize both sides of this ledger. Large loads should pay the costs they cause, and they should receive appropriate treatment, including access to expedited, flexible interconnection pathways and transparent queue treatment, when they verifiably reduce needed system investments and help lower long-run costs for other ratepayers through LLFC-style commitments and bring-your-own-capacity arrangements.

B. State regulatory and legislative support for flexible large-load service

The record shows that many state regulatory and legislative bodies are already moving toward flexible large-load frameworks that balance affordability and speed. The New England States Committee on Electricity and the New England Conference of Public Utility Commissioners, for example, explain that state large-load tariffs in their region already include financial commitments from large customers, curtailment protocols, and minimum contract terms designed to allow rapid interconnection of large loads without compromising reliability or unduly burdening existing customers.

State commissions such as the Maryland Public Service Commission, the Pennsylvania Public Utility Commission, the Virginia State Corporation Commission, and the Georgia Public Service Commission describe complementary approaches that rely on curtailable and interruptible tariffs, explicit flexibility provisions, and contractual commitments and collateral to protect other customers while accommodating rapid growth in large loads.

In Critical Loop's view, one of the reasons these state flexibility efforts are gaining traction is that customers find the requirements to curtail or self-supply are so slight and infrequent that, compared to the ponderous delay of waiting for a grid build-out, the offer is gladly lifted.

Critical Loop encourages the Commission to make this choice transparent and available to customers. Because informed customers may voluntarily accept enforceable operating envelopes, FERC should signal to transmission providers and RTOs that they are expected to represent the flexibility which is required for faster or more economical interconnection in intuitive and transparent terms to the customer. Requirements to curtail should be expressed in duration, magnitude, or frequency and should be built from time-series and probabilistic tools rather than relying only on worst-case deterministic assumptions. Doing so will make it easier for state regulators and customers to evaluate proposed large-load tariffs, because they can compare the modeled curtailment profile with the customer's commitments and understand the associated risk and operational requirements.

C. Regulated rate-of-return incentives and the "own and earn" bias

Several commenters note, and Critical Loop's experience confirms, that cost-of-service utility regulation can unintentionally favor traditional "own and earn" investment in traditional wires and generation over more flexible, customer-driven solutions. A utility's regulated return is typically based on rate-based capital investment, not on its performance in delivering timely energization or in leveraging customer-side flexibility. When faced with a large new load, the path of least resistance under traditional incentives is often to build dedicated network infrastructure, even where an LLFC-style arrangement with on-site storage or controllable load could meet reliability needs more quickly and at lower total cost.

The tools needed to adopt a different approach already exist. Utilities and system operators today use advanced planning software, production-cost models, and real-time control systems that can define operating envelopes, monitor net withdrawals at a point of interconnection, and dispatch behind-the-meter resources or curtail load in response to system conditions. The barrier is not technical feasibility. It is that current tariffs and regulatory frameworks rarely give utilities a clear way to recover the costs of deploying these software and control solutions, or to earn returns on their optimal use that are comparable to traditional network investments.

Critical Loop is not asking the Commission to interfere with state-level ratemaking. Our hope, rather, is that over time state legislators and regulatory commissions will begin to incentivize utilities within their jurisdiction to deliver cost-effective and timely energization through performance-based mechanisms that reward the adoption of non-wires and flexible alternatives where they are determined to be in the public interest.

For purposes of this rulemaking, we ask the Commission to ensure that flexible solutions and LLFCs are studied on a basis that can be compared with traditional upgrades. This occurs by requiring transmission providers to explicitly model enforceable flexibility and operating envelopes, rather than defaulting to static maximum-withdrawal assumptions that treat all co-located resources as absent or charging, and by requiring side-by-side upgrade tables that show which facilities are driven by LLFC-limited operation versus full-withdrawal "non-performance" contingencies. This process can be further accelerated by encouraging or requiring transparent, hosting-capacity-style data for load so that customers can see where flexible operation and on-site resources can meaningfully reduce upgrade needs and select sites accordingly.

After the analytical framework accurately benchmarks and reflects the value of flexibility, state regulators can make more informed decisions about how to align utility incentives through performance mechanisms, tariff design, or other tools, without the Commission dictating retail ratemaking.

D. Time-to-power as a reliability and competitiveness metric

Many commenters implicitly treat time-to-power as a matter of customer convenience. Critical Loop urges the Commission instead to treat speed-to-power as a core reliability and national-competitiveness metric. If AI clusters and advanced manufacturing facilities cannot secure timely interconnections in the United States, investments may migrate to jurisdictions with more agile interconnection frameworks, with long-term implications for national security, supply-chain resilience, and economic leadership. Slow or opaque interconnection processes also encourage uncoordinated behind-the-meter development, which can increase both customer cost and system complexity while reducing transparency for operators and regulators.

Delays in connecting large loads also have clear economic consequences. Each year that a major data-center cluster or manufacturing facility is unable to operate at scale is a year in which potential output, jobs are unfilled, tax revenue, and utility sales are foregone. The value of that lost activity likely would substantially exceed the modest operational costs required to enable on-site flexibility.

Critical Loop also encourages the Commission to treat time-to-power as a measurable outcome of any final rule. Transmission providers and RTOs might be required to track and publish basic statistics for large-load interconnections, such as the time from request to initial determination and from request to energization, broken out by interconnection type and voltage level. Periodic summaries of these metrics would allow the Commission, state regulators, and market participants to assess whether reforms are working and where further improvements are needed.

V. CONCLUSION

The Advanced Notice on the interconnection of large loads arrives at exactly the right moment. Rapid growth in AI, data centers, advanced manufacturing, and electrification is reshaping the grid faster than traditional interconnection and planning processes can adapt, and hesitation will generate an opportunity that our adversaries will surely capitalize on.

Critical Loop respectfully urges the Commission to:

1. Adopt an LLFC-style, opt-in framework that treats large loads as controllable, flexible resources when they commit to enforceable operating envelopes supported by on-site and adjacent resources, and to recognize complementary "bring your own capacity" arrangements for customers that are willing to procure accredited capacity directly.

2. Require interconnection and planning studies to model enforceable flexibility accurately, rather than defaulting to static maximum-withdrawal assumptions that overstate upgrade needs and present these options transparently to all new loads, with an initial determination provided within 60 days of submission.

3. Align cost-causation principles with the system value of flexible, high-load-factor customers that bring their own capacity and accept curtailment, including appropriate accelerated treatment in queues and in capacity and resource-adequacy frameworks.

4. Treat speed-to-power as a core metric of success, alongside reliability, adequacy, and affordability, so that the United States can maintain leadership in AI and other strategic sectors.

We appreciate the opportunity to provide these reply comments and look forward to continued engagement as the Commission develops any proposed rule.

Respectfully submitted,

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COO

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