February 20, 2025

President Alice Reynolds
California Public Utilities Commission
505 Van Ness Ave, 4th Floor
San Francisco, CA 94102

RE: Joint Party concerns about extended delays in much-needed Rule 21 updates and revisions

Dear President Reynolds and Commissioners,

The Joint Parties, consisting of the Green Power Institute, 350 Bay Area, Clean Coalition, and Quantum Energy, are writing to express our serious concerns about the extended delays in implementing critical Rule 21 interconnection reforms, including the Dec. 23, 2024, closure of R.17-07-007 after an extended suspension, without a clear timeline for a new proceeding and completion of much-needed and backlogged reforms. We also address herein our scoping recommendations for the new proceeding.

I. Concerns about delays and extended proceeding timelines

We have three primary concerns about the extended delays on Rule 21 and related reforms:

First, the closure of R.17-07-007 with D.24-12-034 has left a significant regulatory gap, with no clear venue for pursuing crucial Rule 21 reforms, and no timeline offered for when a new proceeding will open. While the Decision indicates the Commission "intend[s] to open a new proceeding that focuses on issues affecting interconnection of distributed energy resources under Electric Rule 21," no timeline has been provided and no OIR has been issued to date – after very significant delays prior to the abrupt closure of the previous proceeding.

This regulatory limbo is particularly concerning given California's ambitious distributed energy resource (DER) goals and the need for significantly improved interconnection processes to achieve them.

GPI and other parties have consistently raised concerns about the appropriate venue for ICA and other interconnection issues in both R.17-07-007 and R.21-06-017, since there has been a lack of clarity and a consequent lack of progress in implementing existing CPUC orders, but also in achieving much-needed new Rule 21 and related interconnection reforms.

Major issues with the new CAISO transmission interconnection process, and downstream delays for DER interconnection, also prompt urgency in starting a new proceeding to improve DER interconnection procedures.

The current state of limbo is reaching a critical state given ongoing issues with energization, interconnection, fire risk, and a renewed sense of urgency given the new federal administration, which has already shown its strong antipathy to green energy in its first month in office.

Second, implementation of previously ordered reforms remains incomplete and inconsistent. D.20-09-035 made important rulings about incorporating the Integration Capacity Analysis (ICA) into Rule 21 practices, including requiring utilities to use ICA values in the Fast Track screening process. Nevertheless, almost five years later the utilities continue to resist full implementation of, or they slow roll, these reforms. While the informal Interconnection Discussion Forum (IDF) has hosted numerous discussions on these issues over the last two years, IDF expressly lacks the regulatory authority to ensure compliance with the orders or to develop new needed reforms. There has also been, as mentioned, a significant lack of clarity on the appropriate proceeding for pursuing needed reforms.

Third, the extraordinary timeline of R.17-07-007 - open for over seven years without completing its scope - demonstrates systematic problems with the pace of interconnection reform that must be addressed more generally. The proceeding's Phase II was suspended for almost two years, from August 2022 to May 2024, resulting in critical delays to needed reforms. And once it was re-started, almost nothing was achieved before its abrupt closure in December. These delays directly impact California's ability to achieve its clean energy and climate goals, which depend heavily on widespread DER adoption.

It has been seven years since the last significant scoping process was done for Rule 21 reform, five years since the last working group process ended, and 4.5 years since the last major decision, which adopted various recommendations from Working Group 2 and 3 (D.20-09-035).

In short, the Commission should allocate appropriate resources and personnel to these important issues if it is serious about a high DER future. State policy and law more generally strongly supports a High DER future, yet the Commission for whatever reason(s) has not been allocating the resources needed.

We respectfully request that the Commission:

1. Issue an OIR for a new Rule 21 reform proceeding, as promised in D.24-12-034;
2. Ensure the scope of the new proceeding includes both implementation review of previously ordered reforms and broad consideration of new needed reforms;
3. Clarify venue issues and coordination between the new proceeding and R.21-06-017;
4. Consider procedural reforms to prevent the extensive delays that characterized R.17-07-007 and previous iterations of Rule 21 reform

The Joint Parties stand ready to engage constructively in this process and to help develop solutions that will enable California to achieve its DER goals through efficient and transparent interconnection processes.

II. Scoping recommendations

The signatories urge the Commission to include the following items in the new Rule 21 reform OIR and scoping memo. This list is an amalgam of GPI's thinking, staff recommendations shared informally with the IDF in early 2025, and IREC's recommended scoping list also from early 2025, organized by topic. A short summary follows and then the more complete outline.

Our recommendations include thirteen key areas to modernize interconnection processes while supporting California's clean energy goals: (1) implementation review of previous orders to address compliance backlogs, (2) technical automation to streamline processes, (3) technical and process improvements to update outdated requirements, (4) load characteristic considerations in interconnection studies, (5) DER communication protocols emphasizing autonomous operation, (6) comprehensive administrative frameworks for efficiency and accountability, (7) effective ICA integration into Rule 21 processes, (8) better utilization of smart inverter capabilities, (9) systematic performance improvement mechanisms, (10) balanced cost allocation frameworks protecting consumers, (11) streamlined requirements for NEM and NBT projects, (12) incorporation of advanced grid technologies as alternatives to traditional upgrades, and (13) specialized interconnection pathways for vehicle-grid integration. Together, these items address critical technical, administrative, and policy needs to dramatically improve interconnection processes while maintaining grid reliability and safety.

1. Implementation Review of Previous Orders

Policy Context: The new proceeding must begin by addressing the implementation status of previously ordered reforms, ensuring accountability for past Commission directives.

Recommended Scope Items:

A. Implementation Status Review

- Assessment of D.20-09-035 implementation
- Evaluation of ICA integration requirements
- Review of LGP implementation
- Status of previously ordered reforms

B. Gap Analysis

- Identification of incomplete implementations
- Assessment of implementation barriers
- Resource requirement evaluation
- Timeline assessment for completion

C. Remedial Planning

- Development of completion timelines
- Resource allocation recommendations

- Technical assistance needs
- Implementation prioritization

D. Cross-Proceeding Coordination

- WDAT tariff consistency review
- Common infrastructure considerations
- Coordination with distribution planning, grid modernization, building electrification, transportation electrification, cost effectiveness, etc

2. Technical Automation

Policy Context: Modern software tools and automated processes can dramatically reduce interconnection timelines while improving consistency and reducing costs.

Recommended Scope Items:

A. Technical Automation Framework

- Development of automation roadmap
- Software system requirements
- Integration specifications
- Data exchange protocols

B. Screen Automation

- Automated technical screen tools
- Integration with ICA data
- Validation algorithms
- Results verification protocols

C. Document Automation

- Automated form generation
- Electronic signature integration
- Document validation tools
- Template management systems

D. System Integration

- Utility software integration
- Database connectivity
- API specifications
- Security requirements

3. Technical and Process Improvements

Policy Context: Rule 21's technical requirements require updates to reflect both current and emerging DER capabilities while maintaining safety and reliability standards.

Recommended Scope Items:

A. Technical Screen Updates

- Reform of Screen G's interrupting capability thresholds
- Modernization of Screen H for inverter-based resources
- Reform of Screens Q and R cluster study criteria
- Development of transmission study alternatives

B. Standards Modernization

- Smart inverter function optimization
- Common file format implementation
- UL 1741 Supplement SB review
- IEEE standard alignment

C. Process Enhancement

- Queue management improvements
- Study process streamlining
- Technical requirement updates
- New technology evaluation frameworks

D. Technical Innovation Integration

- Evaluation protocols for new technologies
- Testing requirements for emerging capabilities
- Pilot program frameworks
- Safety and reliability validation methods

4. Load Characteristics in Interconnection Processes

Policy Context: Rule 21 interconnection procedures need to address how different load characteristics affect technical review and upgrade requirements for DER interconnection. This includes consideration of existing and anticipated load patterns that affect hosting capacity and interconnection requirements.

Recommended Scope Items:

A. Load Classification Framework

- Definition and verification of "known" loads in interconnection studies
- Criteria for including "pending" loads in technical screens
- Assessment of load reduction impacts on interconnection requirements
- Clear standards for load documentation and verification

B. Technical Screen Modifications

- Integration of different load types in screen calculations (base load, flexible load, peak load)
- Consideration of load shapes and timing in technical reviews
- Updates to minimum load screen methodologies
- Assessment of coincident load impacts

C. Interconnection Process Updates

- Procedures for evaluating DER applications with significant associated load changes
- Methods for incorporating verified load changes in ICA values
- Timeline requirements for load data updates
- Process for handling load uncertainty in technical reviews

D. Cross-Proceeding Coordination

- Clear delineation between Rule 21 load considerations and distribution planning processes
- Information sharing protocols for load forecasting data
- Alignment with load modification docket requirements
- Coordination with other proceedings on load-related technical requirements

5. DER Communication and Grid Responsiveness

Policy Context: As DER penetration increases, effective grid integration requires clear protocols for how DERs respond to grid conditions. While maintaining reliability, these protocols should emphasize autonomous operation and local intelligence rather than centralized control, enabling cost-effective solutions that benefit both customers and the grid.

Recommended Scope Items:

A. Autonomous Operation Standards

- Development of standardized grid-responsive behaviors
- Local intelligence and decision-making protocols
- Distributed approaches to grid support functions
- Cost-effective alternatives to direct utility control

B. Technical Requirements

- Autonomous smart inverter settings and responses
- Local measurement and response capabilities
- Peer-to-peer coordination possibilities
- Grid condition signaling protocols

C. Implementation Framework

- Cost-benefit analysis of different response approaches
- Evaluation of minimum necessary communication requirements
- Assessment of autonomous operation effectiveness
- Identification of scenarios requiring active coordination

D. Customer Choice and Protection

- Options for customer control of DER operation
- Privacy and cybersecurity requirements
- Clear delineation of utility vs. customer roles
- Customer override capabilities and protocols

6. Administrative and Process Framework

Policy Context: A comprehensive administrative framework is needed to ensure efficient, transparent, and accountable interconnection processes, incorporating both streamlined procedures and clear oversight mechanisms.

Recommended Scope Items:

A. Process Structure

- Clear timeline requirements
- Standard operating procedures
- Application management protocols
- Queue management framework
- Process flow optimization

B. Compliance Framework

- Performance metric development
- Regular reporting requirements
- Compliance tracking mechanisms
- Enforcement protocols
- Incentive structures

C. Dispute Resolution

- EIDR process implementation

- Resolution pathway development
- Timeline requirements
- Appeal procedures
- Mediation protocols

D. Transparency and Communication

- Data access requirements
- Progress tracking systems
- Communication protocols
- Stakeholder notification procedures
- Public reporting requirements

E. Administrative Streamlining

- Application simplification
- Process standardization
- Workflow optimization
- Resource allocation
- Cost management

7. Rule 21 and ICA Integration

Policy Context: While some ICA development and improvements are addressed in a separate proceeding (R.21-06-017), the further integration of ICA into Rule 21 processes requires specific focus in a new Rule 21 proceeding.

Recommended Scope Items:

A. Implementation Assessment

- Review of D.20-09-035 ICA integration requirements
- Evaluation of current implementation status
- Identification of integration gaps
- Assessment of utility compliance

B. Full Fast Track Integration Processes

- Fast Track screen implementation
- Value validation protocols
- Update timing requirements
- Integration with study processes

C. Utility Practices

- Documentation of current practices

- Consistency across utilities
- Verification procedures
- Staff training requirements

D. Transparency Requirements

- Access to ICA values used in studies
- Documentation of ICA application
- Results communication protocols
- Process transparency standards

[Note: ICA methodology improvements, hosting capacity calculation updates, and other ICA enhancement issues are addressed in R.21-06-017.]

8. Export Control and Smart Inverter Utilization

Policy Context: Smart inverters and export control systems have sophisticated capabilities that are not fully utilized in current interconnection requirements and operational practices. Better integration of these existing and emerging capabilities into Rule 21 processes could enable higher DER penetration while maintaining grid reliability.

Recommended Scope Items:

A. Technical Requirements Integration

- Full utilization of existing smart inverter functions
- Enhanced incorporation of export control capabilities
- Implementation of autonomous grid support features
- Integration of advanced power control systems

B. Standards Implementation

- Implementation of IEEE 1547-2018 and IEEE 2030.5-2023
- Common File Format adoption for settings management
- Testing protocols for new capabilities
- Certification requirements alignment

C. Process Optimization

- Streamlined evaluation procedures
- Enhanced use of autonomous functions
- Improved commissioning procedures
- Setting modification protocols

D. Innovation Framework

- Evaluation of new grid support functions
- Assessment of emerging control technologies
- Integration of hybrid system capabilities
- Validation of new operational modes

9. Systematic Performance Improvement

Policy Context: Beyond individual compliance issues (addressed in Section 6's Administrative Framework), Rule 21 needs mechanisms to identify and address systematic issues that affect interconnection performance and outcomes across multiple projects or utilities.

Recommended Scope Items:

A. Performance Analysis

- Development of systematic issue identification methods
- Analysis of recurring technical and procedural challenges
- Assessment of best practices across utilities
- Identification of systemic barriers to interconnection

B. Process Improvement

- Root cause analysis procedures
- Continuous improvement frameworks
- Knowledge sharing mechanisms
- Best practice development

C. Stakeholder Engagement

- Regular feedback mechanisms
- Issue identification channels
- Solution development processes
- Implementation review procedures

D. Long-term Enhancement

- Strategic planning frameworks
- Innovation pathways
- Pilot program development
- Performance trend analysis

[Note: Specific enforcement mechanisms, compliance tracking, and reporting requirements are consolidated in Section 6: Administrative and Process Framework.]

10. Cost Allocation and Consumer Protection

Policy Context: Cost allocation frameworks must balance fair distribution of costs with consumer protection while supporting efficient DER growth. Current approaches can create uncertainty for developers and may not fairly distribute costs among beneficiaries.

Recommended Scope Items:

A. Framework Development

- Cost sharing methodology
- Upgrade cost allocation
- Consumer protection measures

B. Process Implementation

- Cost envelope procedures
- Deposit requirements
- Refund protocols

C. Special Considerations

- LGP customer provisions
- Load reduction impacts
- WDAT project coordination

D. Monitoring and Reporting

- Cost tracking requirements
- Allocation effectiveness
- Consumer impact assessment

11. NEM and NBT-Specific Requirements

Policy Context: Net Energy Metering (NEM) and Net Billing Tariff (NBT) interconnection processes require specific considerations given their widespread adoption and unique characteristics. While NEM/NBT program requirements are addressed in other proceedings, Rule 21 must efficiently handle interconnection aspects specific to these projects.

Recommended Scope Items:

A. Technical Requirements

- Clear definition of "system size" for interconnection purposes
- Technical requirements for non-exporting additions to existing systems
- Standard single-line diagram requirements

- Metering and telemetry specifications

B. Process Streamlining

- Standardized study processes for common configurations
- Integration with ICA screening
- Expedited review procedures for standard systems
- Queue management for NEM/NBT projects

C. Implementation Framework

- Application fee structure and rationale
- Cost allocation for any required upgrades
- Timeline requirements specific to NEM/NBT
- Special considerations for larger NBT projects

D. Cross-Proceeding Coordination

- Alignment with NEM/NBT program requirements
- Coordination with other relevant proceedings
- Clear delineation of interconnection vs. program issues
- Implementation of program-driven requirements

[Note: NEM and NBT program requirements are addressed in separate proceedings.]

12. Advanced Reconductoring and Other New Grid Technologies for Interconnection Upgrades

Policy Context: Traditional approaches to grid upgrades for DER interconnection often default to conventional solutions like new line construction or like-for-like reconductoring. However, advanced technologies including new high-capacity conductors (which can achieve twice the capacity increase compared to traditional conductors), dynamic line ratings, power flow controllers, and other non-wires alternatives can provide more cost-effective and less disruptive solutions while enabling higher DER penetration.

Recommended Scope Items:

A. Technical Options Framework

- Development of technical specifications for advanced re-conductoring
- Identification of applicable dynamic line rating technologies
- Evaluation of power flow control devices for interconnection constraints
- Assessment of distributed storage as non-wires alternatives

B. Decision Process Updates

- Criteria for evaluating advanced solutions vs. traditional upgrades
- Cost-benefit analysis methodology for technology alternatives
- Timeline considerations for different technology approaches
- Risk assessment framework for new technologies

C. Implementation Guidelines

- Technical standards for alternative solutions
- Verification and testing requirements
- Performance monitoring specifications
- Integration with existing infrastructure

D. Cost Allocation Considerations

- Sharing mechanisms for advanced technology deployments
- Assignment of benefits beyond the interconnection customer
- Ratepayer protection in technology deployments
- Long-term maintenance responsibility allocation

13. Vehicle-Grid Integration & EV Interconnection

Policy Context: Growing EV adoption requires specialized interconnection considerations for both charging infrastructure and V2X capabilities. The Rule 21 framework needs updating to handle both the load impacts of EV charging and the generation potential of V2X, while streamlining interconnection processes for these increasingly common use cases.

Recommended Scope Items:

A. Technical Requirements

- V2X integration standards and capabilities
- Charging infrastructure specifications
- Bi-directional operation protocols
- Advanced fleet management systems
- New V2X technology evaluation frameworks

B. Process Development

- Fleet interconnection procedures
- V2X agreement standardization
- Study process streamlining
- Pilot program frameworks for new technologies
- Expedited review for standard configurations

C. Integration Framework

- Load management requirements
- ICA integration procedures
- Forecasting methodology
- Technology validation protocols
- Innovation pathway development

D. Cross-Proceeding Coordination

- VGI proceeding alignment
- Transportation electrification integration
- Distribution planning coordination
- Technology standards harmonization

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CC to all Commissioners and to Governor Newsom

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Service List:
R.21-06-017
R.17-07-007