

RMD/acr 7/26/2012



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BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking on the Commission's Own Motion to improve distribution level interconnection rules and regulations for certain classes of electric generators and electric storage resources.

Rulemaking 11-09-011
(Filed September 22, 2011)

**ADMINISTRATIVE LAW JUDGE'S RULING
INCORPORATING MATERIALS RELATED TO THE
APRIL AND AUGUST 2011 WORKSHOPS
INTO THE RECORD**

This ruling incorporates into the record materials related to the April 29, 2011, August 19, 2011, and August 23, 2011 workshops held at the Commission. The general purpose of these workshops was to discuss Electric Tariff Rule 21.

These April and August 2011 workshops convened the Rule 21 Working Group. These workshops were open to the public. The Rule 21 Working Group is an ad hoc group with participants from different sectors of the industry. When the group was formed several years ago, it was led by the California Energy Commission and was established to facilitate collaboration on matters related to Rule 21. The Rule 21 Working Group has served as an important resource to the Commission in developing Rule 21 and has provided follow-up monitoring and

on-going suggestions for improvement of the tariff. The Commission held these workshops in April and August 2011 with the Rule 21 Working Group to, in part, determine whether a need existed for Rule 21 reform.

The materials presented at these workshops include the following and are attached hereto.

1. April 29, 2011 Working Group Workshops Agenda.
2. April 29, 2011 Commission Presentation by the Commission's Energy Division Staff "Rule 21 Working Group Workshop."
3. PG&E Case Study: Accommodating High Volumes of NEM Interconnection.
4. SCE Case Study: Exporting Generators under Rule 21.
5. Summary notes from the Workshop by the Commission's Energy Division Staff.
6. Workshop Participant Comments.
7. April 27, 2011 Data Request to the utilities regarding interconnection.
8. Rule 21 Glossary and Resources (April 29, 2011).
9. August 19, 2011 Working Group Workshop Agenda.
10. August 19, 2011 Commission Presentation by the Commission's Energy Division Staff "Rule 21 Working Group Workshop."
11. August 19, 2011 Commission Presentation by the Commission's Energy Division Staff "Rule 21 Working Group Technical Subcommittee Meeting."
12. August 23, 2011 Commission Presentation by the Commission's Energy Division Staff "Rule 21 Working Group Business Practices Subcommittee Meeting."

IT IS RULED that:

1. The attached materials related to the April 29, 2011, August 19, 2011, and August 23, 2011 workshops and identified above are incorporated into the record of this proceeding.

2. Phase 1 of the proceeding is submitted.

Dated July 26, 2012, at San Francisco, California.

/s/ REGINA DEANGELIS

Regina DeAngelis
Administrative Law Judge

ATTACHMENT 1



Rule 21 Working Group Workshop

April 29, 2011
California Public Utilities Commission
Auditorium

Offsite Attendees:

Phone-in: 1-866-812-8481

Participant code: 4545236

The phone line will be listen-only. Phone participants can e-mail questions or comments during the workshop to Kace Fujiwara, at kfl@cpuc.ca.gov. There will be no webex participation at this workshop.

This agenda and all workshop materials will be posted on the CPUC's Rule 21 website as of April 28, 2011: <http://www.cpuc.ca.gov/PUC/energy/DistGen/rule21.htm>. Participants will need to download the presentation materials separately.

Overview:

The CPUC's Rule 21 is the interconnection tariff that applies to distributed generation (DG) interconnecting under the CPUC's jurisdiction. It was first developed in the 1980s, and, since being revised in 2000, it has been primarily utilized by generating facilities interconnected to serve onsite customer load. California utilities have interconnected more than 83,000 distributed generating facilities using Rule 21, the vast majority serving customer load.

Rule 21 was originally used to interconnect PURPA Qualifying Facilities (QFs), which included both renewable and combined heat and power (CHP) generators designed to serve both some onsite load as well as export to the utility system. At that time, Rule 21 had no simplified interconnection study process, and was used to study each project individually. While the QF program has been nearly dormant to new facilities for over two decades, the recent CPUC-approved QF settlement opens the path to new QF development, and it is likely that these QFs will interconnect under Rule 21.

In the early 2000s, the CPUC undertook a Rule 21 reform process that greatly facilitated the interconnection of small (under 1 MW) self-generation units. The reforms created the "Simplified Interconnection" process that exempts small self-generation from certain studies and fees, due to the minimal impact these systems have on the grid.

Today, Renewable Portfolio Standard (RPS)-eligible generation solicitations through various RPS procurement mechanisms, including the renewables feed-in tariffs and the Renewable Auction Mechanism (RAM), are starting to facilitate the development of generators with continuous export to serve system load. While most RPS projects appear to be using the utility

Wholesale Distribution Access Tariffs (WDAT), approved by the Federal Energy Regulatory Commission (FERC) for interconnecting wholesale generators, some of these projects may utilize Rule 21.

The evolving nature of the systems that currently use and are planning to use Rule 21 to interconnect have focused marketplace and regulatory interest on the need for sound interconnection policy, and particularly on the Rule 21 tariff. Utilities, generators, advocates, customers, and the CPUC have all identified various technical, processing, methodology, fairness, and transparency issues arising under Rule 21 in today's interconnection context. The point on which all stakeholders agree is that Rule 21's technical components and policy principles must remain robust to serve as California's key DG interconnection tariff.

This workshop aims to define the technical issues now arising under Rule 21 more concretely, and begin a discussion of the policy principles that it should reflect in today's DG context. The CPUC has three objectives for this workshop:

- 1) Identify and discuss the open and urgent technical issues of Rule 21 that are affecting the interconnection of DG resources serving customer and system load.
- 2) Brainstorm and discuss interconnection policy principles that must be instituted to maintain grid safety, grid reliability, achieve California's renewable energy goals, and best serve customers.
- 3) Discuss the Rule 21 Working Group's renewed role in addressing the most urgent interconnection issues.

Detailed Agenda

- I. Overview – CPUC Staff** **10:00 – 10:30 AM**
- Introductions
 - Housekeeping
 - Workshop goals
 - Problem statement
- II. Rule 21 Working Group Accomplishments, 2000-2008** **10:30-10:45 AM**
- Accomplishments and key items learned to carry forward
- III. Technical Issues Under Rule 21** **10:45 AM-12:15 PM**
- A. Technical issues: Interconnecting facilities that serve customer load
- PG&E Case Study: Volume and complexity of Net Energy Metering interconnections
 - Rule 21’s low-penetration technical screens: Too low? Asking the right questions for facilities serving customer load?
 - Volume of applications, electrical interdependence, and system impact: What trends and/or problems are emerging?
 - Rule 21 processing: Is the Initial Review / Supplemental Review / Detailed Study process still viable for customer-side facilities?
- B. Technical issues: Interconnecting facilities that export and/or serve system load
- SCE Case Study: The CREST Feed-in Tariff Program
 - Rule 21’s review versus higher DG penetration levels and/or exporting facilities: What are the major technical issues?
 - Volume of applications, electrical interdependence, and system impact: What trends and/or problems are emerging?
 - Specific needs of facilities interconnected under Rule 21 and serving system load: Coordination with CAISO for Resource Adequacy credit? Other?
- LUNCH** **12:15 - 1:15 PM**

IV. Rule 21, Statewide Interconnection Policy, and Customer Service 1:15 – 2:15 PM

- Equitable cost sharing
- Potential coordination with CAISO queue and cluster study process
- Efficient application processing
- Defined study methodology
- Tariff language consistency
- Dispute resolution
- New equipment certification
- Data transparency
- Others

V. The Rule 21 Working Group 2:15 – 2:45 PM

- CPUC facilitation, stakeholder participation, technical and policy subcommittees
- Collaboration with Renewable Distributed Energy Collaborative (Re-DEC)

VI. Wrap-up 2:45 – 3:00 PM

- Summary, Next Steps

(END OF ATTACHMENT 1)

ATTACHMENT 2



Rule 21 Working Group Workshop

April 29, 2011
California Public Utilities Commission



Rachel Peterson, Energy Division
rp1@cpuc.ca.gov





I. Introduction

- Welcome and Ground Rules
- Agenda Review
- Interconnection and Today's Renewable Energy Marketplace
- Workshop Goals and Outcomes
- Resource Guide





Welcome and Ground Rules

- Day is structured to stimulate an honest dialogue
 - Listen to other perspectives
 - Keep comments friendly and respectful
- Break as needed
- Lunch at 12:15
- Restrooms located across the hall
- Workshop has phone-in participants
 - Participants in the auditorium must speak into microphones. Please state name and company before speaking.
- Slides online at <http://www.cpuc.ca.gov/PUC/energy/DistGen/rule21.htm>

In scope: Rule 21, interconnection experiences, ideas for reform

Out of scope: Procurement programs (RPS, RAM, FIT), jurisdiction (leave to the lawyers!)





Agenda for Today's Workshop

1. Introduction:
 - a) Interconnection and Today's Renewable Energy Marketplace
 - b) Workshop Goals and Outcomes
 - c) Glossary and Resources
2. Rule 21 Working Group Accomplishments, 2000-2008
 - a) Rule 21's Problem-Solving History
3. Technical Issues Under Rule 21
 1. Customer load-serving facilities
 2. System load-serving facilities
4. Rule 21, Statewide Interconnection Policy, and Customer Service
5. The Rule 21 Working Group – participation, meetings





Interconnection and Today's Renewable Energy Marketplace

Paul Douglas, Supervisor, Renewable Procurement and Resource Planning Group, CPUC





Workshop Goals and Outcomes

1. Goal: Identify technical issues presently affecting interconnection.

Outcome 1: List of key technical interconnection challenges from IOU, generator, and customer perspectives

2. Goal: Brainstorm and discuss guiding principles for interconnection to serve grid safety, grid reliability, achieve California's renewable energy goals, and best serve customers.

Outcome 2: Discuss, modify Rule 21 Working Group's guiding principles

3. Goal: Discuss the Rule 21 Working Group's renewed role in addressing the most urgent interconnection issues.

Outcome 3: Establish need, scope, and rough priorities for Rule 21 reform

Outcome 4: Confirm Rule 21 Working Group's purpose statement





Glossary and Resources

Available at <http://www.cpuc.ca.gov/PUC/energy/DistGen/rule21.htm>

- **Glossary of terms**
- **Basic customer and procurement program descriptions**
- **Links to CPUC and CEC distributed generation pages, CPUC interconnection decisions, and other resources**





So, which interconnection tariffs are we talking about?

Rule 21 – CPUC jurisdictional, for projects interconnecting to utility distribution system

NOT:

Wholesale Distribution Access Tariff (WDAT) – Utility tariffs, for FERC-jurisdictional projects interconnecting to or using the transmission system.

Small Generator Interconnection Procedures (SGIP) – FERC jurisdictional, for smaller projects interconnecting to lines under FERC jurisdiction (transmission lines). SGIP has recently been combined with FERC’s Large Generator Interconnection Procedures (LGIP) to create a single Generator Interconnection Procedure (GIP).





II. Rule 21 Working Group Accomplishments, 2000-2008





Rule 21's Problem-Solving History

Until 1978, non-utility-owned generation could not interconnect to the grid; the Public Utility Regulatory Policies Act (PURPA) of 1978 required utilities' first-ever electricity purchases from Qualifying Facilities (QFs) at avoided cost.

First Problem Solved: Rule 21 interconnected PURPA QFs, other early non-utility-owned generation (renewable and non)

- a) Neutral as to export
- b) Required individual study of each facility
- c) Facility could interconnect to either transmission or distribution system

1996-2000: Early self-gen incentivized by initial CA programs, but interconnection was costly and time-consuming

Second Problem Solved: Rule 21 modified in 2000 by Rule 21 Working Group to offer simplified interconnection path for interconnection to distribution system





Rule 21's Problem-Solving History (cont.)

2000-2008: Self-gen undergoes transformation in widespread adoption, equipment advances, and public perception. “Self-generation” became “Distributed Generation” (DG).

Third Problem Solved: Rule 21 Working Group adapts Rule 21 to continual marketplace changes for customer-side DG.

“The process of working together to revise Rule 21 has increased all stakeholders’ understanding of DG systems and how they may be integrated into the distribution system. Communications with the utilities have improved considerably, and interconnections are now proceeding more rapidly and smoothly.”

Participant, Rule 21 Working Group Workshop (June 20, 2008)





The Legacy: Results

1. **The Rule 21 Working Group successfully developed a model tariff that:**
 - a) **Is size and technology neutral**
 - b) **Offers simplified interconnection for DG**
 - c) **Sets out operating and metering standards for DG facilities that draw on technologies available to customers**
 - d) **Saves DG customers time and expense**
 - e) **Has improved communication between utilities and customers**
 - f) **Has maintained consistent DG interconnection standards in California**
 - g) **Has been emulated in numerous other states**





Legacy: Purpose of Rule 21 Working Group

“Host an open forum to build consensus for Rule 21 reforms to meet the technical needs and policy goals of interconnecting distributed generation to the utility distribution system.”

(From CEC and CPUC materials)





Legacy: Guiding Principles

1. **“Rules, protocols and processes should be clear and transparent.**
2. **Rules should be technology neutral, except when differences fully justified.**
3. **Level playing field should be established for all DG providers.**
4. **Rules should be uniform throughout California.**
5. **Utilities should be fairly compensated for distribution services that support DG installations and customers.”**





III.A. Technical Issues: Interconnecting facilities that serve customer load





Workshop Outcome 1:

List of key technical interconnection challenges from IOU, generator, and customer perspectives





General facility characteristics

- **Projects receive upfront incentives**
 - **California Solar Initiative**
 - **CEC New Solar Homes Partnership**
 - **Self-Generation Incentive Program**
 - **Emerging Renewables Program**
- **Projects must be sized to load**
- **Installed projects reduce demand for grid services by serving onsite load**
- **PV, wind, fuel cell, and limited biogas facilities eligible for Net Energy Metering tariffs (1.0 MW size limit)**





PG&E Case Study: Volume and Complexity of Net Energy Metering Interconnections

- **Clarifying questions**





Stakeholder Discussion: Rule 21's Low-Penetration Design and Study Methodology

1. How have “clear and transparent rules, protocols, and processes” been affected by the volume of NEM and non-NEM self-generation facilities (serving customer load) applying for interconnection under Rule 21?
2. How has a “level playing field” been affected by the low-penetration screens as they are applied to facilities serving customer load?
E.g.: Screen 2: Will power be exported across the Point of Common Coupling?





III.B. Technical Issues: Interconnecting facilities that export and/or serve system load





General facility characteristics

- **Projects do not receive upfront incentives**
- **Revenue streams are based on participation in procurement programs, with price set by the market or standard pricing**
 - **Renewable Portfolio Standard**
 - **AB 1613 – Combined Heat and Power facilities**
 - **Feed-in Tariffs for Renewables**
 - **Reverse Auction Mechanism**
 - **Utility PV programs**
- **Designed for net export to the grid, and provide energy and capacity used for utility procurement obligations**





SCE Case Study: The CREST Feed-In Tariff Program

- **Clarifying questions**





Intersecting Issues: Volume, Electrical Interdependence, and System Impact

- What “clear and transparent rules, protocols, and processes” have been affected by the increased volume of system load-serving facilities applying for interconnection under Rule 21?
- How has a “level playing field” been affected by the electrical interdependence of system load-serving facilities applying for interconnection under Rule 21?
- How has a “level playing field” been affected by the system load-serving facilities that have a system impact when studied under Rule 21?





IV. Rule 21, Statewide Interconnection Policy, and Customer Service





Workshop Outcome 2:

Discuss, modify Rule 21 Working Group's guiding principles





Guiding Principles for Modifications to Rule 21 (2000-2008)

- 1. Level playing field should be established for all DG providers.**
- 2. Rules, protocols and processes should be clear and transparent.**
- 3. Rules should be technology neutral, except when differences fully justified.**
- 4. Rules should be uniform throughout California.**
- 5. Utilities should be fairly compensated for distribution services that support DG installations and customers.**

CEC Presentation at Rule 21 Workshop, June 21, 2008





1. Level Playing Field for All DG Providers

1. A “level playing field” in Rule 21’s current design means:
 - a) First-come, first-served
 - b) Serial study process
 - c) Low processing costs
 - d) 8 clearly defined technical screens offer clear path to simplified interconnection

2. What does a “level playing field” mean in today’s renewable marketplace?
 - a) Among all customer load-serving facilities...
 - b) Among all system load-serving facilities...
 - c) Between the above groups...
 - d) Between the above groups and projects in the CAISO queue and cluster...!





2. Clear and Transparent Rules, Protocols, Processes

Example: Changes in the marketplace may have affected:

- a) Application processing time frames**
- b) Standard application and interconnection agreements**
- c) Dispute resolution**
- d) Data collection and transparency**





3. Generation Technology Neutral

1. **Example: New equipment certification versus utility-directed commissioning testing changes the time frame and cost**
2. **What other aspect of Rule 21 renders the interconnection process not technology neutral?**





4. Uniform Rules Statewide

1. **Example: Consistency among all IOUs as to: tariff language, metering and operating standards for interconnection**





5. Fairly Compensate Utilities for Distribution Services

Example: What are distribution services that utilities currently provide to interconnected DG customers? How do utilities recover those costs?





V. The Rule 21 Working Group





Workshop Outcome 3:

Establish need, scope, and rough priorities for Rule 21 reform





Workshop Outcome 4:

Reaffirm the Rule 21 Working Group’s purpose

(open forum...build consensus... Rule 21 reforms to meet technical needs and policy goals of interconnecting DG to distribution system...)





Mechanics

1. Open to anyone participating today
2. Sectors represented through 2008:
 - Utilities
 - DG developers
 - Equipment manufacturers
 - Consultants
 - Advocates
 - Industrial, Commercial, and Residential DG Users
3. Technical, policy subcommittees





VI. Wrap-Up

- Deliverables:
 - Summarized notes from today will be posted on <http://www.cpuc.ca.gov/PUC/energy/DistGen/rule21.htm>
 - CPUC staff will set out straw proposal for Rule 21 reform, likely subject of next workshop
- Next Steps

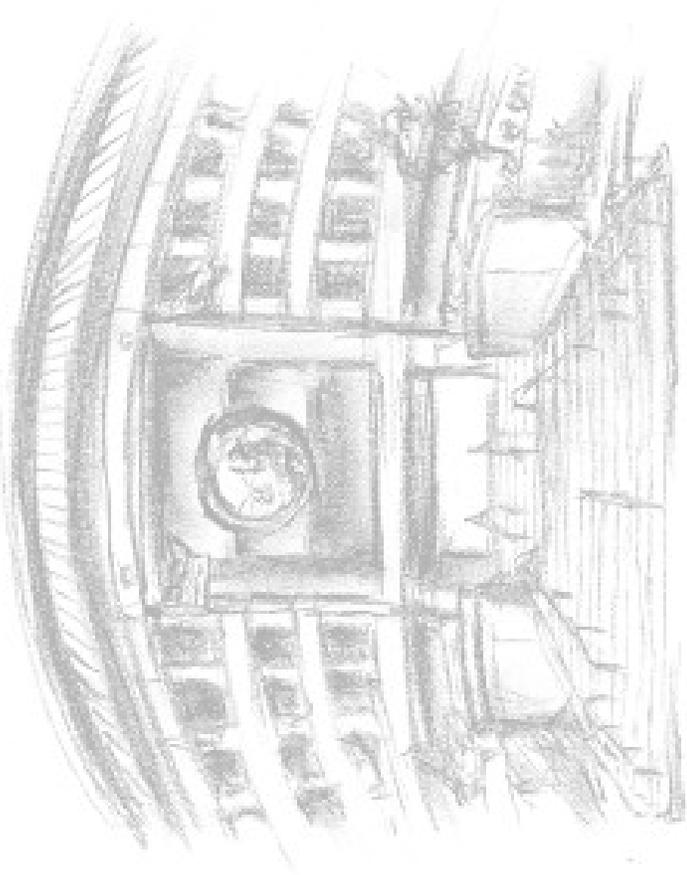




Thank you for participating!

Updates and information:

<http://www.cpuc.ca.gov/PUC/energy/DistGen/rule21.htm>



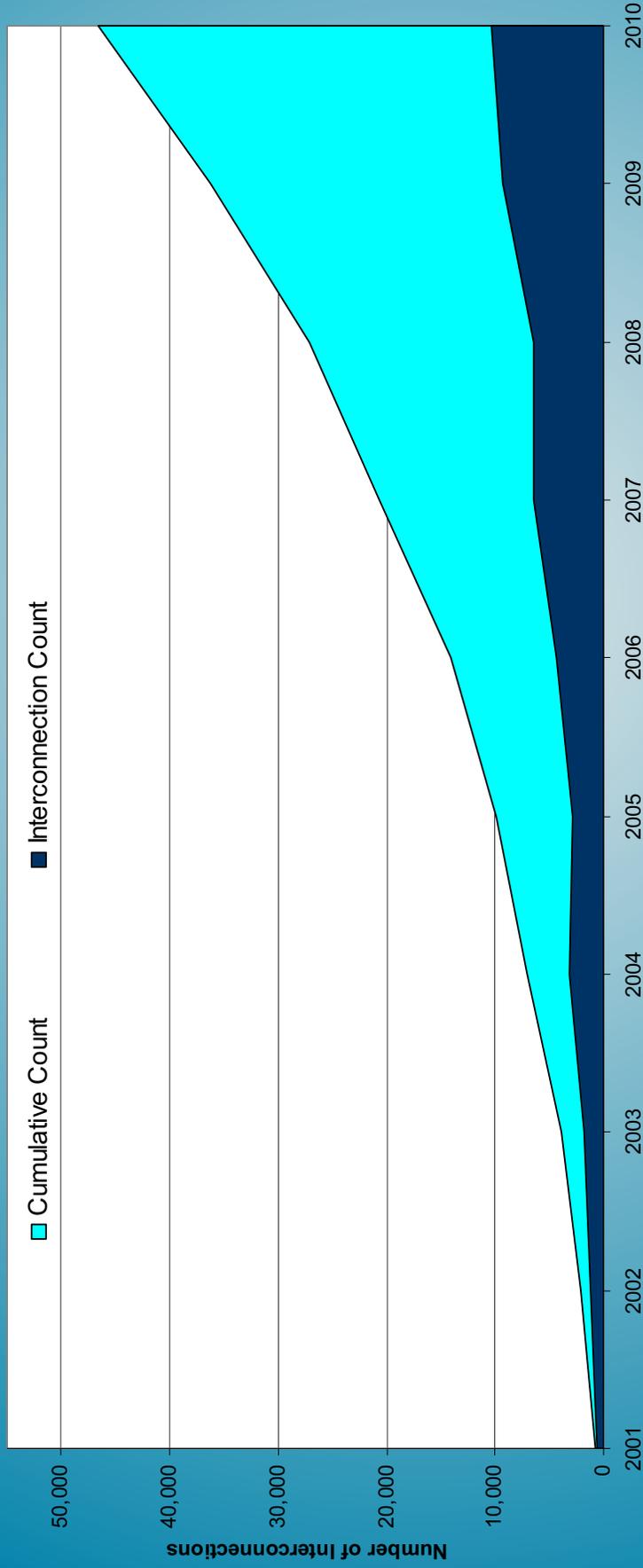
(END OF ATTACHMENT 2)



ATTACHMENT 3

Accommodating High Volumes of Interconnection

NEM Interconnections by Year with Cumulative



PG&E Technical Issues: Case 1

Rule 21 D.3.d. : The maximum Net Nameplate Rating of the Generating Facilities shall be 20 kVA for single-phase generators, connected to a shared, single-phase secondary system.

Issue: NEM customer attempting to interconnect a PV system that exceeds the Rule 21 D.3.d requirement. The customer is responsible for paying to install a new distribution transformer for their PV system.

Proposal: PG&E has requested additional flexibility so that the customer will not be required to install a new transformer if PG&E's engineering review determines the existing transformer is sufficient to support the interconnection.

Status: Originally submitted Advice Letter in August 2009 to revise the 20kVA limitations. Advice letter was protested and PG&E worked with all parties to resolve outstanding concerns. Re-filed modified language in Advice Letter 3508-E-A in March. Recently suspended with a final decision still pending.



PG&E Technical Issues: Case 2

Rule 21 Screen Four: “Is the aggregate Generating Facility Capacity on the Line Section less than 15 percent of Line Section peak load?” This is used to determine if a project interconnection will qualify under a simplified Interconnection or if it will require Supplemental Engineering Reviews for engineering approval.

Issue: Higher Penetration of DG projects means increasingly hitting the 15% criterion, requiring additional engineering review. How do we transition to the >15% world?

- For the < 15% world, simplified trip settings in inverter-based DG are set to trip quickly to respond to various system disturbances, maintain personnel safety, and avoid causing problems with other DG customers.
- For the > 15% world or other Rule 21 screen thresholds are crossed, generators provide system support and trip last; the protection needs to be more refined and set for local fault detection and the general parameters (voltage and frequency) will be set with a much wider bandwidth. When the 15% threshold and/or other Rule 21 thresholds are crossed, will existing DG have to be reset and/or will it need to add new protection devices (e.g., direct transfer trip)?

Status: Open



Looking Forward: DG Interconnections Under a Holistic Approach

- Facilities are interconnected to the electric system via several programs (SGIP, CSI, WDAT, RAM, RPS etc.) and may be governed by CPUC or FERC interconnection rules.
- Facilities come in various technologies such as, solar, wind, small hydro, bio-gas, combined-heat power and micro turbines and can be inverter or machine based.
- We sometimes focus on interconnection and technical issues from a particular program based perspective. However, the grid's response to DG being installed is independent of programmatic choices. The relevant factors are the technical aspects.

It is becoming increasingly important to think holistically. Taking this approach will require coordination between the Rule 21 working group, Re-DEC, CAISO and other forums governing interconnections.

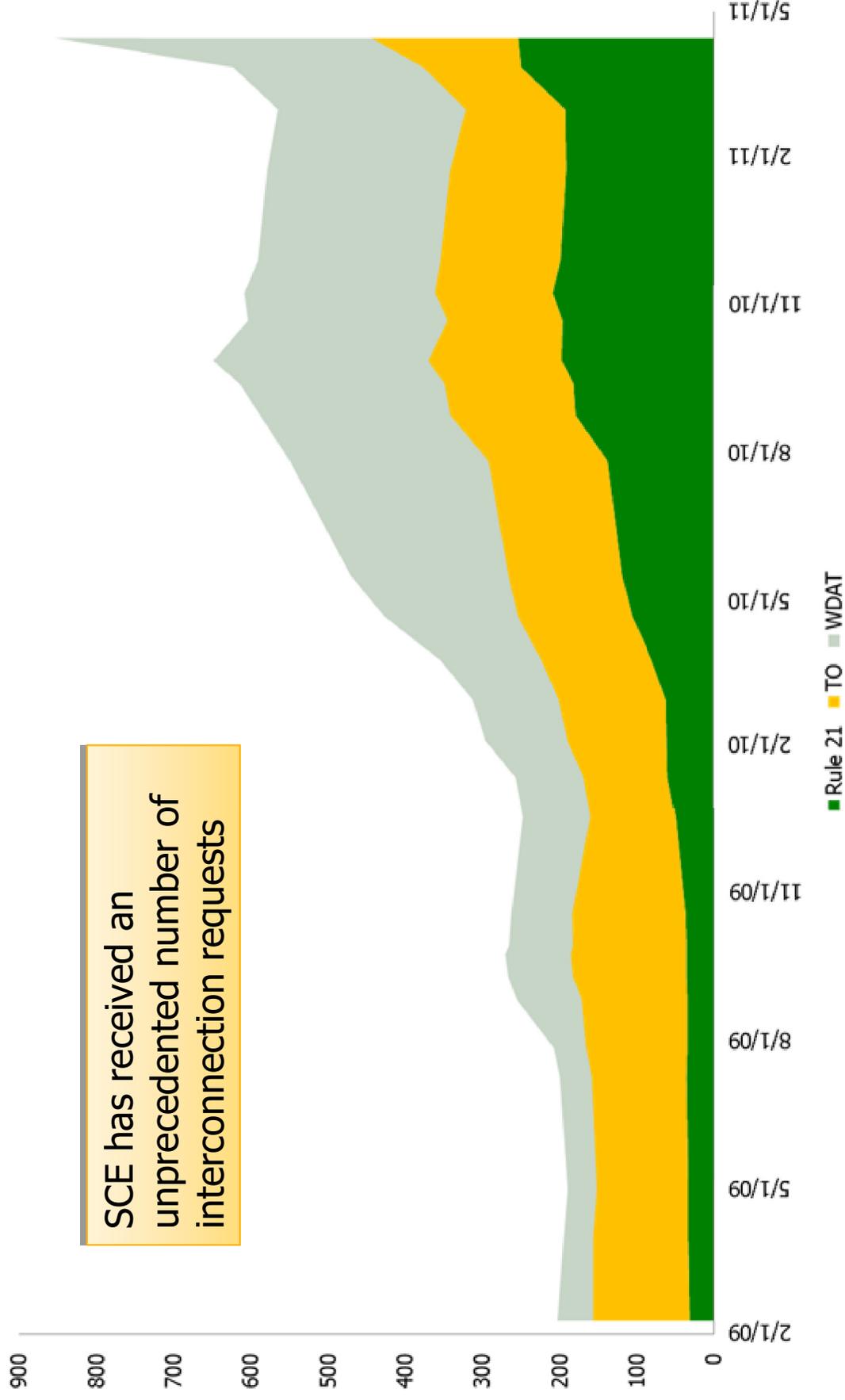


ATTACHMENT 4

Exporting Generators Under Rule 21

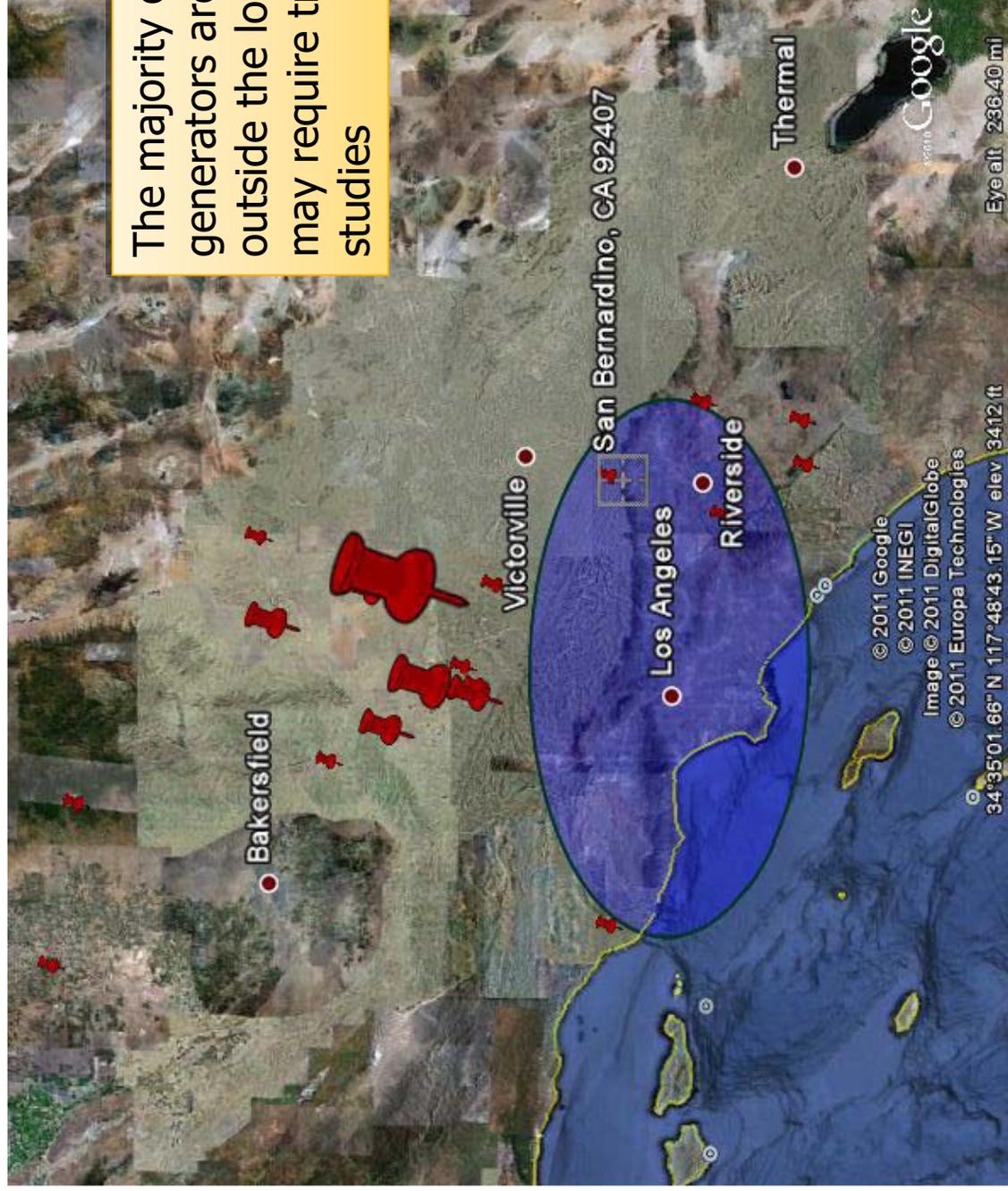
April 29, 2011

SCE's Active Interconnection Requests (excluding NEM)



CREST Generator Locations

The majority of CREST generators are located outside the load center and may require transmission studies



CREST Challenge – Cluster Interdependency

The diagram illustrates a power system configuration. At the top, a 'Transmission' line connects to a 220kV substation. This substation feeds two 66kV substations. These 66kV substations are interconnected and feed 12kV distribution buses. Various CREST and WDAT OC4 projects are indicated at different voltage levels: CREST projects are shown at the 220kV, 66kV, and 12kV levels, while WDAT OC4 projects are shown at the 66kV and 12kV levels.

QC4 Study Timeline

3/31/11 ~7/1/12

CREST CREST

If base cases are established based on projects submitted by 3/31/2011, and final studies for the WDAT projects are not completed until July 2012, then how can the CREST projects be studied for:

- Short Circuit Duty/Breaker Replacement
- Power Flow
- Thermal overload
- Voltage Control
- Cost Responsibility

CREST Challenges Continued

- SCE has added staff in 2010 and 2011 to handle the growth in interconnection requests
 - Grid Interconnection and Contract group has added 9 employees
 - Field Engineering has created a new group with 8 employees to study distribution interconnections
- SCE was required to develop policies and procedures because the Rule 21 tariff lacks guidelines on study methodology, queue management, standardized agreements and coordination with other interconnection tariffs
- Because of the interdependency issue, some projects are delayed waiting for cluster study completion

Objectives for Rule 21 Reform for Exporting Generators

- Ensure generators are interconnected as quickly as possible in a safe and reliable manner
- Develop a study process that is coordinated with the CAISO and WDAT interconnection tariffs and recognizes the interdependency of interconnecting generators
- Allow for Deliverability Studies for Resource Adequacy
- Provide for equitable cost allocation
- Preserve Rule 21 original functionality for “behind the meter” applications

(END OF ATTACHMENT 4)

ATTACHMENT 5

Summary Notes

Rule 21 Working Group Workshop

April 29, 2011

Auditorium, CPUC

Workshop presentations available at: <http://www.cpuc.ca.gov/PUC/energy/DistGen/rule21.htm>

CPUC Staff Note: These are notes summarizing stakeholder comments at the Rule 21 Working Group workshop, and do not represent official positions of CPUC. These notes are provided in the interest of open dialogue on technical, procedural and policy issues that have emerged as self-generating facilities apply for grid interconnection using Rule 21.

I. Overview – Rachel Peterson, CPUC Energy Division

- Introductions, housekeeping
- Interconnection and Today's Renewable Energy Marketplace
- Workshop Goals and Outcomes
- Glossary and Resources: see CPUC Rule 21 website

Interconnection and Today's Renewable Energy Marketplace

Paul Douglas, Supervisor, CPUC Renewable Planning and Procurement Group

Key takeaway: the market is changing; interconnection is key to achieving California distributed generation goals within programs incentivizing customers to offset onsite load and larger renewable energy procurement programs.

Workshop Goals and Outcomes

Goal: Identify technical issues presently affecting interconnection.

Outcome 1: List of key technical interconnection challenges from IOU, generator, and customer perspectives.

Goal: Brainstorm and discuss guiding principles for interconnection to serve grid safety, grid reliability, achieve California's renewable energy goals, and best serve customers.

Outcome 2: Discuss, modify Rule 21 Working Group's guiding principles.

Goal: Discuss the Rule 21 Working Group's renewed role in addressing the most urgent interconnection issues.

Outcome 3: Establish need, scope, and rough priorities for Rule 21 reform.

Outcome 4: Confirm Rule 21 Working Group's purpose statement.

II. Rule 21 Working Group Accomplishments, 2000-2008

- Accomplishments and key items learned to carry forward

Key takeaway: Rule 21 has evolved over time to address different problems.

III. Technical Issues Under Rule 21

Workshop Outcome 1: List of key technical interconnection challenges from IOU, generator, and customer perspectives.

A. Technical issues: Interconnecting facilities that serve customer load

Clarifying comments:

- Generally facilities interconnecting to the utility distribution system tend to use Rule 21. These include homes, businesses and solar arrays on a parking lot. However, increased size and exporting units lead to questions over which interconnection tariff to use.
- Fuel cell generators, renewable or other, are eligible for Net Energy Metering (NEM).
- Clarifying comment: "Utility distribution system" is a term that can include both distribution and transmission systems. Depending on the specific design of the utility grid to which a facility is being interconnected, it could be at either level. Different utilities have different operating levels for what distribution and transmission levels mean.

PG&E Case Study: Volume and Complexity of Net Energy Metering Interconnection

PG&E Presentation Notes:

- PG&E has interconnected 50,000 NEM customers to date in its service territory. Average time to process applications and interconnect NEM customers during heaviest application volumes in 2010 was 24-26 business days. To date in 2011, has returned to 7-10 business days.
- NEM users are largely inverter-based interconnections (solar). Most have been synchronous motors.
- Rule 21 Sec. D.3.d (20 kVA limit for single-phase generators) is outdated. PG&E has submitted Advice Letters asking for flexibility in regards to this limit and customers are waiting for guidance on the issue.

Stakeholder Discussion of PG&E Case Study and Broader Implications:

- Rule 21 Screen Four: "Is the aggregate Generating Facility Capacity on the Line Section less than 15 percent of Line Section peak load?" Passing or failing this

screen often determines whether or not a facility can achieve simplified interconnection or must go through supplemental review.

- There is now higher penetration of distributed generation (DG) projects on the distribution level, easily surpassing that percentage.
- The 15% screen is an older threshold created during the last revision of Rule 21.
- Clarifying comment: Even when a project is bounced into Supplemental Review, it still may ultimately achieve interconnection without requiring distribution system modifications or upgrades. Supplemental Review is used to study a facility's electrical interdependence further.
- The original Rule 21 Working Group struggled with how to let smaller DG be interconnected when those units don't have a system impact. The 15% threshold was low enough for everyone to accept at the time, and still feel comfortable that reliability would not be disturbed. The 15% of peak load screen is a proxy for 50% of minimum load as utilities have good data and a fair level of confidence about peak load records (but lack good or universal records of minimum load for every feeder).
- Solar is an intermittent resource. Some of the solar installations reduce minimum load, so determining daytime minimum load for when solar output is greatest could provide guidance as to solar's benefits to the grid.
- Rule 21 also simplified the generator trip settings and emphasized safety so that any disturbance on the system would immediately trigger a generator to trip offline.
- DG projects are electrically interdependent with other customers (DG and non-DG), and even though they're small, as volume of DG grows, they can potentially have an impact on other customers.
- The transmission level allows interconnection of facilities that will transport their output to a wider geographical range (generators aren't necessarily serving customers who are located nearby).
- Line section capacity diminishes as you go down the section. Distribution circuit capacities lessen as you move away from the substation – they're tapered, not uniform – and the load changes as you move away from the distribution circuit.
- Regarding maps: Utilities have information regarding peak load at the circuit breaker, but with thousands of line sections, it's not a simple technical matter to translate and portray all of that information in an accessible manner.
- PG&E is working on the issue to provide that level of detail at a later date. Feasibility isn't certain, since the distribution system is dynamic.
- In answer to questions about what percentage of circuits have DG installed and operating: SDG&E: ~80% of 956 total circuits have some DG penetration (primarily via solar PV installations).
- Rule 21 Section D.3.d: Places a 20 kVA load limit for single-phase generators on a single-phase secondary system. 20 kVA was set as a threshold that is low enough to provide comfort that the facility won't unbalance load. Unbalanced loads lead to voltage problems and thereby service disruptions. The 20 kVA limit is partly based on transformers used.

- For a system over 20 kVA, utilities install a dedicated transformer. If the transformer is already installed with three or four customers totaling 15 kVA, and adding another customer would drive it over the 20 kVA limit, is that customer responsible for the dedicated transformer or is that a utility cost because there are multiple customers? Need guidance.
- A different scenario: What happens when three systems each with 20 kVA, totaling 60 kVA, seek interconnection? The earlier scenario had three 15 kVA systems and added a 6 kVA unit. The earlier scenario occurs more often but both are problematic.
- Was the 20 kVA limit set with single-family homes in mind? Should it be reconsidered in light of the demand for DG on multi-family housing, which will require different operating standards for interconnection?
- There are a lot of solar facilities now, interconnected under multiple programs with different types of technology being installed. There is a tendency to focus on FERC or CPUC based rules. Need to make sure that where we're going doesn't cause conflict down the road. Exporting facilities are putting power back on the grid. Agree with PG&E that we need to take a holistic, system-based approach.

Continued Stakeholder Discussion of Intersecting Technical Issues for Interconnecting Facilities That Serve Customer Load:

Question 1: How have “clear and transparent rules, protocols, and processes” been affected by the volume of NEM and non-NEM self-generation facilities (serving customer load) applying for interconnection under Rule 21?

- For small customers (e.g., farmers), the process is too confusing and inaccessible.
- As more biogas technology is installed there's an emphasis on streamlining, simplicity, doing what makes sense in terms of the state's goals around DG, reducing GHG and reducing peak load demand. These issues are complex for a customer who's primarily occupied with how DG will help his/her other business (e.g., farm).
- Important for Rule 21 to remain neutral as to type of generating technology.
- PG&E has interconnected 50,000 NEM customers to date, 10,000 in 2010 alone. They're deluged with applications and are experiencing trouble getting them through the system. Utilities need to work on improving internal systems, particularly more online, user-friendly solutions. SDG&E has online NEM interconnection application.
- The queuing issue becomes more important where system upgrades may be needed. Projects sizing greater than their load might spark need for upgrades.
- The queue is more of an issue with larger WDAT projects. There is some concern as larger projects get interconnected on the distribution side. We are now at the juncture where we need to think of how all these moving parts are working together.
- In general, small projects are processed quickly with minimal study. A 6 kW unit is relatively small and usually does not bring the line section close to 15%

of peak load, so there's not much of an issue. Even if Supplemental Review is required because the facility fails one of the screens, 99% of small projects still pass and achieve simplified interconnection. Projects sized greater than their load may be subject to a queue. The intent of a queue is to benefit the customer – e.g., it allows consideration of how to handle more than one project on the same circuit where an upgrade is required that will affect and benefit more than one customer. A queue helps organize potential cost allocation.

Question 2: How has a “level playing field” been affected by the low-penetration screens as they are applied to facilities serving customer load?

- For the institutional customer, concern that the playing field has been leveled too much. For example, Rule 21's lack of definition within Supplemental Review has led to confusion, ambiguity about how utility will reach its interconnection decision.
- Suggestion: Ways to categorize projects could be based on the project size itself (an absolute number, e.g. 1.0 MW), or in terms of size relative to the load it's serving. E.g., a 2.0 MW facility serving a campus with 20 MW load will never export to the grid, and merits simplified interconnection.
- Suggestion: Transparency so that solar companies can see into the utility queue and make relevant business decisions.
- The earlier ~24 business day number for processing NEM interconnection applications is probably closer to 10 business days. The higher number reflects periods of high volume, which will likely occur more often in the future.
- Suggestion: An online means of checking interconnection application status.
- Suggestion: A better-understood process for projects whose interconnection study lasts more than 30 days. PG&E is currently the only utility that sends the CPUC a list of projects that take 30+ days to complete and details the reasons for the longer process. There are projects undergoing further study for legitimate reasons, but we need a transparent way to see into that process and analyze why – not just why one project moves ahead with interconnection, but also why another project application is taking so long by itself.
- PG&E is currently working on improving transparency with its online tool to inform generators. That will probably be built out over the next few months and then posted on the website.
- PG&E has the greatest number of customer-side interconnections. SDG&E transitioned to an online application process 1.5 years ago. SDG&E's average processing time is 4-5 calendar days, and have interconnected 3,200 customer load-serving facilities without increasing staff size.

B. Technical issues: Interconnecting **facilities that export and/or serve system load**

SCE Case Study: The CREST Feed-in Tariff Program

SCE Presentation Notes:

- SCE has experienced growth in interconnection requests – their numbers have doubled or tripled from last year, mostly from customers trying to interconnect at the distribution level.
- Facilities that are not located near the load they are serving require transmission level interconnections.
- The biggest technical issue is interdependency of generators. A lot of facilities are trying to interconnect to the same line and are impacting each other. These facilities need to be studied in a coordinated way – cluster process for those that don't pass fast track. The cluster study examines system and design. The study problem will become more pronounced with increased volume and size of generators coming in under Rule 21.
- Volume increased last spring due to the CREST program. SCE added staff – five of nine new staff members work on Rule 21.
- Rule 21 lacks re: study methodology within Supplemental Review and for when a facility interconnecting under Rule 21 is electrically interdependent with other facilities interconnecting under WDAT and TO tariffs. Queuing management is very important here because generators require studies and have to be coordinated with WDAT and TO queues. Some generators are delayed because they're waiting for the queue to close.
- Clarifying comment: SCE's term "TO" refers to "Transmission Owner" tariff used for interconnection to the CAISO-controlled grid. This is the same as the GIP under FERC jurisdiction.

Stakeholder Discussion of SCE Crest Feed-in Tariff Program Case Study and Broader Implications:

- SCE has some excess generation areas that are good sites for solar but the load isn't present.
- In terms of classifying generators, facilities located far from the load they're serving are different from those serving their own load or co-located with load. The latter group tends to interconnect more quickly with less costly upgrades.
- Some facilities serve system load but only use and need distribution lines, so they do not need to be placed in the same queue as generators that need certification for Resource Adequacy from CAISO. When these distribution-only facilities are placed in the same queue, they have to engage in transmission-level requirements despite only needing distribution lines.
- There are greater challenges in putting generation on rural lines as opposed to urban areas. Rural lines are often at the end of the line and proposing projects want to export power to the distribution system on a line that has a small wire. This problem is lessened if the project is serving onsite load or NEM but exporting power to the utility definitely faces challenges.
- SCE's interconnection maps (using Google Maps) highlight excess capacity areas in red and quantify the excess capacity. Any generator can start with a consultation with an engineer before submitting an interconnection application.
- SCE maps on the server provide aid to applicants to meet fast track.
- Rule 21 currently says that some interconnection queue information is confidential. Generators are interested in releasing some of the currently

confidential information in exchange for IOUs posting of an interconnection queue similar to CAISO's. A lot of the information (date of request, technology, location, size, status) is not confidential but helps generators understand how busy the line section is.

- A lot of applications under WDAT are essentially at the transmission level.
- SCE has begun using the WDAT fast track screens in Supplemental Review in order to have some defined, consistent study methodology for projects that fail one of the Rule 21 technical screens.
- Supplemental Review is a black box; needs definition so that generators and IOUS understand how a facility placed in Supplemental Review can still achieve interconnection.

Continued Stakeholder Discussion of Intersecting Technical Issues for Interconnecting Facilities That Serve System Load:

- Some projects aren't even trying to interconnect because the problems are too daunting and expensive. Facilities with generally similar characteristics might have one factor leading them into Rule 21 or WDAT. That distinction needs to be identified and addressed.
- There are queue problems that emphasize the disparity between large and small companies, often creating more challenges for small companies to compete.
- The side of the meter on which the project is located doesn't matter. DG requires load. If you don't have the load, you can't do cheap interconnection. Cheap, simplified interconnection is for projects that offset their load.
- Export and non-export is also no longer a way of categorizing DG. All DG facilities export, including NEM facilities.
- Rule 21 Section F.5 can require telemetry for facilities 1.0 MW or larger. Some utility discretion is allowed where a less intrusive or more cost-effective option is available and supplies the needed data. In some instances, SCE has required a telemetry retrofit on projects over 1.0 MW, which has imposed large, unanticipated additional costs.
- The growth in customer-side facilities means that eventually there may be a line section where there's sufficient generation interacting with system-side projects to require a study of electrical interdependence.
- Engineering judgment primarily considers voltage control. Under CPUC requirements, utilities must provide customers with voltage control, which ensures power quality and reliability.
- Utilities don't uniquely regulate the voltage to each customer or each branch but rather regulate out to the substation. If you have a good solid load on one feeder and you get a voltage rise because of self-generation, then the project is likely to need supplemental review.
- Neither Supplemental Review nor Detailed Interconnection Study within Rule 21 describe the study that an IOU will conduct to determine whether project can still achieve interconnection. Cost, metering requirements and processing times need to be outlined in Rule 21 for generators that don't pass initial 8 screens.

- Utilities require +/-5% of nominal voltage. Inverters can operate at +/-10%. Problems arise at shared secondaries – could impact others when the IOUs are required to serve them on NEM interconnections. For larger interconnections, there could be problems on the primary which could impact more customers.
- Residential customers want to be able to offset their own load. Consider adopting a core principle that residential customers have the right to offset their load; consider keeping interconnection free or very low-cost. Residential installers probably won't participate in Rule 21 Working Group, but they need to be represented. In general, need to provide interconnection transparency to the residential market.
- The Rule 21 Working Group simplified the interconnection process in 2001 with 8 initial screens. Supplemental Review wasn't defined, and now is where problems start. Customers don't know what will be studied in Supplemental Review; Rule 21 Working Group now needs to define Supplemental Review.
- The distribution system's primary objective is to serve load. The secondary objective is to take generation outside of that particular environment (export). Serving load comes first.
- Location is key: Where a generator is interconnected into the distribution system is extremely important. Information from IOUs about good places to interconnect is important for the generator and will level the playing field for everybody and the ratepayers.
- Utilities have different distribution systems (different voltage levels, and which portions are under IOU control as opposed to CAISO control), which is confusing for generators. Need to clarify the regulatory entity responsible for a specific voltage level for each of the utilities.

IV. Rule 21, Statewide Interconnection Policy, and Customer Service

Workshop Outcome 2: Discuss, modify Rule 21 Working Group's Guiding Principles.

SDG&E Case Study: Infrastructure Development Bonds and Upgrading Distribution Facilities

SDG&E Presentation Notes:

- Since 1983, SDG&E has worked with local governments who have issued tax-exempt debt used to finance significant portions of SDG&E's distribution and transmission lines.
- Two significant conditions: (1) the utility must be an annual net importer (not particularly onerous test, and not triggered by interconnection in the near future); and (2) SDG&E cannot build any of its local system sooner, larger, more costly, or in a different design than is required to serve its customers. Failure to comply could trigger IRS review and endanger tax-exempt status of debt.
- Hypothetically, if SDG&E needed to build out to a new subdivision, the test allows building a circuit bigger than necessary for today's load but reasonably foreseeable as needed for future planned load.
- One workaround is receiving FERC order to make system upgrades to accommodate self-generation interconnection; requires use of WDAT tariff.

- SDG&E working through determining standards for Rule 21 projects. Hasn't seen the flood of interconnection requests that the other utilities have. Isolated 1-2 MW projects and larger have been studied to determine if those projects would require new facilities to mitigate an impact.

Stakeholder Discussion:

Guiding Principle 1: Level Playing Field for All DG Providers

- “Distributed generation” means serving local load. Given the increase in projects seeking interconnection to the utility-controlled distribution system, Rule 21 might need to be modified beyond just interconnecting DG. Rule 21's scope may need to be addressed and expanded.
- Jurisdiction aside, projects interconnected under Rule 21 and WDAT can physically be interconnected on the same line. One goal should be clarification of types of DG: “You are this kind of facility, your output is intended for _____, and you are state/federal jurisdictional.”
- Suggest reconsideration of maximum system size eligible for NEM; place 3 MW on the table for discussion.
- The distribution system changes all the time. What is “local generation” today could change – in the future could be located on the utility-controlled transmission system.
- There are new ways to categorize the renewable energy marketplace. Categories that we choose should begin to consider each category's different characteristics and interconnection needs as far as determining a path for interconnection. Proposal: Establish two playing fields – different costs, time frames, and rules/screens – one for those facilities that offset their load, and another for those facilities that export their load.
- Rule 21 currently looks like it was designed for NEM. Any reform should address NEM and non-NEM projects separately.
- Reform of Rule 21 should address exporting projects. Maintain uniform tariff language, study screens, agreements, contracts.
- Think about interconnection as safely interconnecting to the grid. Standards that promote safe interconnection can be uniform across all types of generating facilities; they don't necessarily affect the two NEM and non-NEM categories of facilities differently. If any technical requirements that are different according to NEM / non-NEM type of facility get built into Rule 21, there needs to be justification. Projects of larger sizes might justify a different cost allocation method to reduce impact on ratepayers, but the technology required of them for grid safety is not necessarily different.
- The business side of managing interconnection queues or working with customers doesn't necessarily relate to safe interconnection with or without study.
- All issues relate to further identification of study process. The Rule 21 study process needs further refining, rather than establishing one set of technical standards for NEM and another set for non-NEM facilities. IREC has actively opposed introducing different standards.
- Struck by the SMUD example where wholesale generators achieved interconnection on a certain line section, and when a later self-generation customer applied, could not interconnect because the entire load was already in use. Offsetting one's own load

should be properly incentivized and rewarded. Self-generation should be acknowledged as a right.

- Do energy storage companies serving the customer side of the meter belong in the Rule 21 Working Group?
- Tying a NEM project size cap to the onsite load, even where it exceeds the current NEM cap of 1.0 MW, would make a lot of people happy.
- Rule 21 should not discriminate by type of power (green vs. brown), or size of facility. Distinguishing between green vs. brown in interconnection is discrimination.
- Utilities need to be able to process applications close to the designated time frames.
- The defining technical factor appears to be whether a project is feeding power into the grid, and if that export has any grid impact.
- Concern over whether Rule 21 is able to handle Governor Brown's call for 12,000 MW of DG.
- The playing field is not level for some renewable technologies, such as biogas, which is leading some potential generators to increase fossil fuel use; an unacceptable result, given the climate emergency.
- The reality is that DG projects actually beneficial to the system are few and far between. Projects don't apply for the sites where generation would be beneficial because land is expensive. Instead, applicants try to locate projects in less populated areas, where regulation is not as strict. DG is not really beneficial in those locations.
- Rule 21 Working Group needs to distinguish between technical processes and cost/business processes involved in interconnection. For example, technical questions include: What will physically happen to the grid? Cost/business questions include: How do you allocate costs? Who gets charged for the actual improvements to the grid? Rule 21 and tariffs in general should clearly define technical and business processes. This should be a core principle.
- Agricultural customers have a basic GHG problem they need to solve: methane. If we can harness the methane in dairy farms, we solve a large environmental problem for GHG emissions. A farmer can't look at an ideal interconnection sites map and move to a good distribution access point. However, the broader policy questions are important for generators who can choose their sites, so that California can meet the 33% RPS goal.
- Concern over Rule 21 addressing anything other than the technical aspects of grid reliability and safety. Also need to guard against preference of purchase for credits, etc. if the utility purchases the output.
- In the end, the ratepayer pays. Even if the utility pays up front, they have to reflect that in their rates. Maybe the initial costs should go to who can handle that cost and allocate that cost the best. Maybe the utility should be paying to upgrade certain stations. The current allocation is inefficient, haphazard, and complicated.
- Consider applying a cost-effectiveness metric.
- Suggestion to use procurement zones to plan ahead.

Guiding Principle 2: Clear and Transparent Rules, Protocols, Processes

- Suggest that Rule 21 Working Group address: (1) the 20 kVA rule for single-phase generators connected to shared single-phase secondary system (Sec. D.3.d), particularly in order to implement a consistent approach (per customer or per transformer); and (2) other conservative technical standards in Section D. Where do these numbers come

from? What are the engineering concerns? Suggest Rule 21 Working Group focus on developers being able to help customers.

- Don't always have the flexibility of switching between phases. Need to reroute to get from one phase to another, which is expensive.
- Complete modification of Supplemental Review. Previous Rule 21 Working Group was working on Supplemental Review Guideline but didn't complete. Guideline was last revised 2005, and is available on CEC website (<http://www.energy.ca.gov/distgen/interconnection/guideline.html>).
- Disputes under Rule 21 typically based on costs rather than processing/study delays. Disputes have focused more on if requirements were really required (e.g., telemetry).

Guiding Principle 3: Generation Technology Neutral

- Legacy technology was machine-based. Now it's more inverter-based (microturbines, fuel cells, solar).
- In the old Rule 21 Working Group days, there were three kinds of technology: induction, synchronous and inverter. Brown power, green power, didn't matter. We didn't treat them as technology-neutral because there are fundamental differences between the three.
- There's a difference between preferring a fuel type and the reality of when energy is being put on the grid. E.g., modify 15% screen depending on whether facility is generating during day or at night. This is not about preferring one technology but rather evaluating technologies when they're putting energy on the system.
- Technology plays a part when there are disturbances on the system – technology protects against voltage, frequency issues. If DG systems go offline without protective technology, you could potentially black out the whole system.
- Rule 21 Working Group needs to look at equipment used in the market, time of day, and degree of protection the equipment provides to the grid.

Guiding Principle 4: Uniform Rules Statewide

- Rule 21 Working Group achieved tariff consistency.

Guiding Principle 5: Fairly Compensate Utilities for Distribution Services

- Think about self-generation projects as using the distribution system as a battery during the day and then extracting that energy at night or at peak time. Utilities manage service to provide reliable service to a self-generating customer. That might be one of the services highlighted.
- The standby tariff was developed to compensate utilities for building the distribution system out to a facility that self-generates.
- Two concerns: (1) There is a cliché that DG benefits ratepayers by reducing transmission and distribution costs, but there are no avoided transmission and distribution costs if you have to build out a system to accommodate the interconnected generator; and (2) Where do ratepayer interests get represented? Application processing costs are covered by general rate costs. Generators cover system upgrade costs. Those issues will continue as more self-generating facilities come online.
- Renewables up to 1.0 MW are exempt from the standby tariff charges; everybody else has to pay.

- Facilities can choose to be non-exporting and be entirely separate from the utility, but it's rare.
- Are different levels of standby service possible and/or applicable? For different projects wanting to be more economical or reliable, maybe the level of standby service should be part of the interconnection process.
- Suggest removing this as a core Rule 21 Working Group principle as it's not pertinent for a generator exporting to the grid.
- Commission decisions about Rule 21 happened in the same proceeding that exempted renewables under 1 MW from standby charges. This is a technical problem that leads to a cost allocation issue. It is appropriate to think about this issue in the context of capping application fees (e.g., as currently capped in Rule 21). Commission would have to decide if it's appropriate for ratepayers to cover.
- Principle needs rephrasing to more clearly state it as a cost allocation principle.
- Rule 21 still works well for some projects that pass screens and have expedited process. There's a real need for Rule 21 to address the units that don't pass the initial screens, but don't make them go through long, complicated studies. Retain what's working, but move forward to provide additional levels of expedited process, specifically clear screens that can accommodate more DG. Goal is to have more predictability ahead of time, fewer studies required, progress towards meeting CA's renewable and DG goals.

V. The Rule 21 Working Group

Workshop Outcome 3: Establish need, scope and rough priorities for Rule 21 reform

Workshop Outcome 4: Reaffirm the Rule 21 Working Group's purpose

Stakeholder Discussion:

- Rule 21 covers a wide range of subjects. Suggestion: Create subcommittees to get specific groups of stakeholders addressing particular problems (e.g., exporting issues, SCE CREST program).
- Business practice issues: The utilities aren't all doing things in the same way.
- General desire to support self-generation projects with simple, fast interconnection.
- Need numbers for projects caught in Supplemental Review – dealing with a lot of projects? Or a few developers that can be addressed via targeted dispute resolution?
- Rule 21 Working Group purpose statement is good, simple and to the point. Developers want to get projects built.
- Need to know scope – types of projects – and jurisdiction in developing purpose statement. Should the issues discussed today be addressed through Rule 21 or other interconnection tariffs?
- There are no articulated goals for Rule 21 from a policy perspective, but we need to think about policy objectives and market segments wanting to interconnect under Rule 21.
- Worth looking at the policy goals: Gov. Brown's 12,000 MW of DG, 33% RPS need to be reflected in Rule 21.
- Also need to consider interconnection rules outside of Rule 21. Collaborate with the WDAT working group and CAISO.

- Emphasis on accountability in interconnection reform. The best rules and policies are great but need someone holding the utilities and entities accountable.

Stakeholder Discussion of Rule 21 Working Group Mechanics:

- There are a number of different ways to find areas of common concern; we can form subcommittees along those lines. Possible request for participation commitment to ensure consistency.
- Don't silo too much: some issues are either/or but some issues require a larger group of people need to discuss – e.g., the 15% screen. A bunch of projects on the wholesale side could block self-generation from interconnecting; the self-generation side should stay informed of system-side developments.
- There are some issues we can figure out for CA on the Rule 21 side, and those might influence WDAT, GIP, etc. nationwide. Don't want to overstate the importance of Rule 21, but this is where it all started. Some broader technical issues need a bigger group.
- A lot of the initial Rule 21 requirements were designed for low DG penetration; now the world has changed, and our policies and programs are specifically targeting high penetration.
- Rule 21 Working Group will collaborate with the Renewable Distributed Energy Collaborative (Re-DEC).

VI. Wrap-up

Summary, Next Steps

- CPUC Staff will develop a straw proposal for the Rule 21 Working Group's scope and a rough set of priorities.
- The subject of the next meeting or workshop will likely focus on the straw proposal and subcommittees to pursue Rule 21 reform.
- Some issues that came up today will not be addressed in Rule 21.
- Please send additional comments to Rachel Peterson, rp1@cpuc.ca.gov.

(END OF ATTACHMENT 5)

ATTACHMENT 6

From: Randal Friedman [mailto:randalfriedman@gmail.com]
Sent: Thursday, May 12, 2011 5:12 PM
To: Peterson, Rachel A.
Subject: NAVY COMMENTS FROM WORKSHOP

Rachel – Thanks again for putting the workshop together. Here is a summary of the comments from the Navy. Please understand these are meant to be general in nature given the start of this process.

- **Level playing field -- We believe that a true level playing field requires recognition/definition of a facility that threshold triggers must consider size and load of the facility. A 1MW trigger might be appropriate for a small business campus but not for a military base with an 8MW base load and a peak load of 16MW.**
- **Self-generation projects should receive priority treatment as they avoid load imbalance and transmission issues. This is particularly true in SDGE territory given bond constraints they identified.**
- **Requirements for retrofit of past projects and data collection, e.g. telemetry must be based on clear needs taking into account the system's size and load and potential to impact the grid. One size doesn't fit all.**
- **If Governor Brown's plan for 12,000MW of mid-sized projects is to be realized these Rule 21 issues, as well as other issues tied to facility size must be quickly addressed.**

Thanks.

Randy

From: Dufau-mccarthy, Genevieve [mailto:GFD3@pge.com]
Sent: Friday, May 13, 2011 5:33 PM
To: Peterson, Rachel A.
Cc: Kalafut, Jennifer; Hirsch, Harold
Subject: Rule 21 Working Group Comments

Rachel,

Here are some preliminary comments from PG&E with regard to Rule 21 and reactivation of the Rule 21 Working Group. PG&E is very glad the Rule 21 Working Group has re-started and we appreciate your willingness to accept comments and agenda items.

One of PG&E's very pressing issues right now is how to address the gap in our existing rules for processing new interconnection requests from Qualifying Facilities (QFs) selling all their output to PG&E under a Public Utility Regulatory Policies Act (PURPA) power purchase agreement (PPA). We are already receiving inquiries and letters from interested parties regarding the interconnection process. Lacking guidance from the Energy Division, PG&E feels it will need to file the draft advice letter we shared earlier with you proposing interim rules for interconnecting QFs in the May 31, 2011 timeframe to provide a means of interconnecting existing and new QFs signing the 20 MW PURPA PPA under the Combined Heat and Power (CHP) generator settlement, new QFs under the AB 1613 CHP program, and to be responsive to the increasing number of requests from new interconnecting parties. The CHP Settlement requires QFs under Standard Offer extensions to sign new Settlement PPAs within 120 days after the Settlement effective date. QFs signing the PURPA Settlement PPA must execute new interconnection agreements because their existing interconnection agreements expire along with their legacy contracts. The IOUs are to file their AB 1613 compliance PPAs by advice letter on May 16. New AB 1613 CHP sellers have already contacted PG&E about interconnection arrangements. Given this urgency, we feel compelled to remind the Rule 21 Working Group participants and Energy Division of the reasons why the current Rule 21 cannot effectively support QF interconnections.

The current version of Rule 21 is very different from the form that the QF industry relied on to interconnect at the beginning of the QF program. It is not that Rule 21 prohibits QF interconnections, but as it stands it does not have key elements needed to support new QF interconnections:

- PG&E currently does not have a CPUC-approved Rule 21 interconnection agreement for compensated export. We have a modest uncompensated export addendum but it is limited in scope and size and not applicable to generators exporting power for sale.
- Rule 21 does not contain a structure to study exporting facilities and needed upgrades or a cost allocation methodology for these upgrades.
- Rule 21 does not address the queuing of projects and how new Rule 21 projects should be integrated with queues already in place.
- Rule 21 does not integrate the requirements of the CAISO into the interconnection process, creating the potential for delay or multiple interconnection hurdles.
- Rule 21 does not include provisions for QF generators to obtain resource adequacy certification.

PG&E will be fully engaged in the Rule 21 revision process. However, we have proposed an interim solution to modify Rule 21 to direct QF generators needing new interconnection agreements to use the FERC interconnection process pursuant to CAISO's Tariff for projects interconnecting at the transmission level and pursuant to PG&E's Wholesale Distribution Tariff (WDT) for projects interconnecting at the distribution level. A draft advice letter describing this proposed interim process was circulated earlier this year and PG&E held a public workshop on March 15, 2011 to vet this proposal.

By relying on the existing FERC's Generator Interconnection Procedures (GIP) our interim proposal will provide an immediate response to interested sellers. Generators eligible for fast track treatment would see little if any difference between the FERC rules and Rule 21. Likewise generators that require study but are electrically independent from other projects may find the timelines and details in the FERC process an improvement over the current general nature of Rule 21's detailed interconnection study. While we are sensitive to generator concerns regarding non-fast track costs and cluster timing, there can be no reasonable expectation for generators to have a better experience in cost or timing under Rule 21 than in the GIP. Comments during the Rule 21 workshop from Southern California Edison CREST generators seeking interconnection under Rule 21 support our view that in its current form, Rule 21 does not adequately address the current interconnection environment with respect to cost, timing, CAISO rules or system impacts.

In order to ensure the fair, prompt treatment of interconnection requests and to create a reasonable level of planning certainty for generators, PG&E believes these matters should be addressed expeditiously in the interim at minimum as the Rule 21 Working Group moves forward on a longer-term resolution.

Thanks again for this opportunity on behalf of the PG&E Rule 21 Working Group,

Genevieve Dufau-McCarthy
IDSM, Policy Implementation and Reporting
Pacific Gas and Electric
Internal Phone: 223-1602/External: 415-973-1602

From: Al Rosen [mailto:albyr24@gmail.com]
Sent: Friday, May 20, 2011 2:09 PM
To: Peterson, Rachel A.
Cc: Peterson, Rachel A.; Peter Weich; Douglas, Paul; Marks, Jaclyn
Subject: Our comments on Rule 21 are attached

[rule 21 51511 comments \(2\) final.doc](#) (46.5K)

Rachel, Paul and Jaclyn:

The attached comments are from me (Al Rosen) and my partner, Peter Weich (Absolutely Solar Inc.). We are developing 5 CREST projects in the Antelope Valley (and are filing applications next week for 4 more) Peter does our system design, deals with interconnection and electrical engineering and is our in-house expert on the technical issues. Some of Peter's comments appear in the margin of the attachment. Peter also wanted to add the further general comment ---

"I find it difficult to picture how to fairly interconnect under the present rules. Rule 21 was definitely not set up for DG. In the end, after thinking about it, I don't believe that any "in queue mechanism" will work. I think the best approach would be to determine the maximum capacity of each substation, estimate the cost per MW (for facility upgrades) and provide this estimate to a power producer. The total cost per MW should not be higher than \$x per MW for projects up to 3 MW (\$100k?). Connection costs to the distribution system could be based on the distance from substations to facilities and only for existing power lines. Any other additional costs from the existing distribution lines to the generation site will have to be determined individually, but a rough estimate based on past experience could be given too.

This will also produce the beneficial effect that facilities closer to loads will offer cheaper interconnection cost. In the end DG will end up more effective, more efficient and less costly, closer to loads and more profitable to the producer."

al rosen
310 440 8001
310 491 9470 (NEW FAX)
310 699 7733 (cell)
Albyr24@gmail.com

Rule 21 Comments by Al Rosen and Peter Weich (Absolutely Solar, Inc.)

May 16, 2011

These comments relate only to Rule 21 as it is applied to CREST and as administered by SCE from December, 2009 to the present date. We have five pending CREST applications in various stages.

No CREST project can pass the screens required by the Initial Review. Since CREST projects ALL export power across the PCC to the grid, they all violate Screen 2. Even without Screen 2, most CREST projects won't pass Screen 4 because they are likely to exceed 15% of the line section peak load.

Projects that fail the Initial Review (all CREST projects) must undergo a Supplemental Review to determine if interconnection costs and issues can be determined without a full Interconnection Study. We are unable to find a description of the Supplemental Review procedure in Rule 21 and SCE hasn't told us anything about how they conduct Supplemental **Reviews**.

On our first two CREST applications (GFID 5257 and 5258), SCE didn't tell us that we failed the Initial Review for many months (despite Rule 21's deadline of 10 business days). SCE never told us that they performed the Supplemental Review (required to be completed within 10 additional business days) or how they performed the Supplemental Review, nor were we ever given the results of the Supplemental Review. SCE told us only that we needed to pay SCE a \$25,000 deposit per project to perform a comprehensive interconnection study. On our more recent three CREST applications (GFID 5476, 5477 and 5478), we were told 6 weeks after we applied that we'd failed the Initial and

Comment [PW1]: I was told by SCE's Mary Brown, it serves only to put the projects into the queue, so for \$1400 you can be in queue for one year and more(section 1.b 4), after the completion of the study, affecting studies and costs of other projects behind in queue. It Seems to me that after the study is done that the producer needs to move more quickly to pay a down payment to hold his place or proceed immediately to the next study (90 days?)

Supplemental Reviews. This time we were told which screen of the Initial Review we failed (strangely, it was Screen 4, NOT Screen 2). Again, there was no description of how the Supplemental Reviews were performed.

Essentially, CREST projects are never eligible for Rule 21’s Fast Track process because they can’t get past the Initial and Supplemental Reviews. Those reviews cost \$1400 per project and, as administered by SCE, can cause many months of delays.

A revised Rule 21 (for 3MW maximum projects connected to distribution lines) should replace these reviews with a transparent process to reveal capacity availability (including better maps). **Rule 21 should provide an inexpensive, fixed price and FAST (30 days?) process to find out if facilities upgrades will be required. For most CREST projects, the high cost of facilities upgrades would kill the project, whereas the costs of interconnection are much more likely to be affordable.**

The next big hurdle for CREST projects under Rule 21 is the Combined System Impact Study and Facilities Study Agreement (CSISFSA). We can’t find any provision in Rule 21 that sets forth the terms of the CSISFSA and assume the agreement was drafted by SCE. SCE requires a \$25,000 “deposit” to do the combined study. Where does that number come from? The deposit is characterized as an estimate and the actual cost of the study could be more or less. **There is NO SET PRICE TO DO THE STUDY.** SCE refused to consider lowering the deposit for studying our two contiguous projects (as authorized by Rule 21, C, 1, b, (5)). After the first CSISFS was completed, we asked SCE to refund any part of the deposit which exceeded the actual cost of the study (See Paragraph 11 of the CSISFS Agreement). **SCE told us that they would not “true up” the costs until we dropped out of CREST or**

Comment [PW2]: Facility upgrades depend on basically PV MW size and could be shared proportionally by all projects on line where as interconnection cost to the power line (distribution system) depend on size and location of project e.g. , more costly if project is far away from existing distribution lines.

Comment [PW3]: SCE is supposed to give the producer a cost estimate (section 1.c.3) of any additional required studies after the project fails the initial and supplemental studies which always seems to be \$25K each, even for multiple side by side projects

signed the Interconnection Facilities upgrade agreement (IFFOA).

In the meantime, SCE is keeping all of the \$25,000 we paid without interest.

The CSISFSA allows SCE 60 business days to complete the study. When we filed and paid our \$25,000, **SCE said that they were very busy and that we should estimate at least 120 business days.** SCE is not penalized for delays, so, in practice, there is **NO SET TIME TO DO THE STUDY.**

The CSISFSA only provides an estimate of the interconnection costs and that estimate can change without notice. Moreover, the combined study is insufficiently detailed for the developer to rely on. We are having difficulty obtaining information from SCE regarding our responsibilities for telemetry, harmonics, lagging voltage, etc. The study should spell out all of the technical requirements in detail, so the developer can refine final plans and equipment specifications accordingly. **The study is insufficiently detailed and provides NO SET COST TO DO THE INTERCONNECTION.**

The revised Rule 21 should set specific prices and time limits and contractual provisions for all studies. Those time limits should be supervised and enforced by a neutral third party and failures to meet deadlines should be penalized. Rule changes are important, but if they are not strictly enforced, the utility can excuse all delays by claiming to be “understaffed” and “over worked”.

Another problem with the CSISFSA is that it assumes that projects that applied before ours are in service and the potential system enhancements or modifications required for such projects are our responsibility (CSISFSA, Section 4g). **It would be much fairer if each project was**

Comment [PW4]: We were told that we could not see all the studies details they did internally, even though we are paying for it

Comment [PW5]: Yes, that's right we need very detailed equipment information.

only required to pay for its proportionate share of its impact on the grid. There are a variety of ways this could be accomplished.

Because we paid SCE to study only GFID 5258, according to Rule 21, SCE also had to include the impact of GFID 5257 (our project ahead of the one SCE studied) on the grid. After the GFID 5258 study was completed, we asked SCE to reduce the deposit and the time period to study GFID 5257 (because SCE already had determined its impact when they studied 5258). SCE refused. We were still required to “deposit” another \$25,000.

Another issue raised by the CSISFS is the price of telemetry and the requirement of a T-1 line. It appears that SCE (as evidenced by our completed study of GFID 5258) is requiring over \$150,000 in telemetry equipment for each 1.5 MW project, plus the applicant must pay the cost of installing and maintaining a T-1 line. The revised Rule 21 should make sure that the cost of telemetering is as low as possible. SCE’s current interpretation of Rule 21 F. 5 (requiring SCE to use the least intrusive, most cost effective method of obtaining necessary data) is to require the highest cost, most sophisticated method (amounting to a \$100,000 extra cost per MW). Also, SCE has not filed any of the quarterly reports required by F.5 showing “...the rationale for requiring Telemetering equipment in each instance along with the size and location of the facility”.

Comment [PW6]: If a T1 line is not close to a project, this could add up significantly to costs. An alternative should be offered (satellite service?)

Random Thoughts Re: Modifications to Rule 21 (for CREST and other DG projects under 3 MW that connect to distribution lines) These thoughts are offered with the understanding that a simple, fast, inexpensive interconnection process for DG will increase DG deployment and could substantially reduce the cost of renewable energy to ratepayers:

- Provide a real FAST TRACK process which would allow most PV projects under 3 MW to determine interconnection costs quickly and inexpensively and with certainty;
- Standardize study procedures, costs and time lines;
- Penalize utility failures to follow timelines and other provisions;
- Appoint a third party monitor to collect data, resolve disputes quickly and enforce rules [the current Dispute Resolution Process (in Rule 21 G) is unwieldy, time consuming and potentially costly ---90 days of fighting with SCE, followed by the need to file a Formal Complaint with the PUC]. Complaints about IOU administration of interconnection issues should be resolved fairly, simply and quickly by an objective third party;
- Should utilities be required to provide all facility upgrades at their cost and then be allowed to rate base those costs?
- Should the utilities and the PUC determine the average system wide cost of interconnecting solar PV facilities under 3 MW to distribution lines and then charge developers a fixed price per MW to **interconnect**?
- There should be a fair way of apportioning project cost among applicants. Instead of requiring applicants to pay the interconnection and facilities upgrade costs of all projects ahead of that applicant in the queue, the utility could offer the earlier applicants a choice: **Pay your fair share of the interconnection costs now or move behind the current applicant in the queue.**
- Or, if there are projects ahead of the applicant's, the applicant could **pay ONLY its proportionate share of the total upgrade costs that would be necessary to accommodate all the projects ahead of it in the queue.**
- Another possible approach to interconnection costs would have the utility pay for and do the upgrades necessary for all the projects in

Comment [PW7]: I think this is a great idea, how about the utility studies the max facility capacity in MW and provide the cost per MW to interconnect to that facility. System upgrades then would depend on each location

Comment [PW8]: I think that if a producer wants to stay in queue after the interconnection study has been completed, some sort of earnest money should be required, (large enough to be significant relative to project size and refundable of up to a year?)

the queue ahead of the applicant. The applicant would pay its proportionate share. If any of the applicants ahead in the queue don't pay for their share, the utility could advertise the unused available interconnection capacity and cost and offer it to a new applicant.

- To reiterate a crucial issue alluded to above... When a developer looks at a site, the main concern is interconnection. And, the main concern about interconnection is the possible requirement of facilities upgrades. Those upgrades can be very expensive and make a CREST project economically unviable. If developers could obtain a prompt answer to the upgrade question, site selection would be better targeted and most applications would be concerned with only the costs of interconnection. Those costs are easier to determine and easier to bear.
- Require utilities to “true up” estimated costs promptly and refund unused money to the applicant promptly.
- Why should the applicant have to sign and pay for the IFFOA before signing the PPA? A signed PPA is essential to obtaining financing. Forcing the applicant to pay hundreds of thousands of dollars for the IFFOA before signing the PPA is unnecessary and adds a significant burden to the project financing process.

[When the interconnection and metering design for your generator is Complete, SCE will complete the Interconnection Facilities Financing and Ownership Agreement (IFFOA) for your review. Once you and SCE have signed the IFFOA, it will be inserted into the power purchase agreement in Appendix B.

Until the IFFOA is signed and inserted into Appendix B, the CREST PPA cannot be executed.]

- Finally, although it isn't a Rule 21 issue, the PPA termination language is another serious obstacle to obtaining financing.

Comment [PW9]: I have always wondered what would happen if there are 6 MW in queue by various developers and the cost to upgrade the facility is shared by all, if SCE would upgrade to facilitate the 6 MW capacity only or would SCE evaluate the potential maximum capacity of the facility and without incurring unreasonable costs upgrade to a max capacity of for example 10 MW? Leaving a spare capacity of 4 MW. Will a power producer who comes later be able to have “free capacity” of 4 MW? Or if SCE doesn't upgrade to its max capacity, will the next producer have to pay for another facility upgrade? Potentially making a second facility upgrade even more expensive than the first.

From: Al Rosen [mailto:albyr24@gmail.com]
Sent: Saturday, May 21, 2011 12:34 PM
To: Peterson, Rachel A.
Cc: Marks, Jaclyn; Douglas, Paul; Peterson, Rachel A.; Peter Weich
Subject: FW: Rule 21 comment DRAFT--Peter is my comment accurate?

Hi Rachel:

I already sent you my complete comments on the Rule 21 issues, but I did want to add this comment on something I read in the workshop notes:

“SCE’s interconnection maps (using Google Maps) highlight excess capacity areas in red and quantify the excess capacity. Any generator can start with a consultation with an engineer before submitting an interconnection application.”

SCE’s maps are a good basic start. However, they were developed for the SCE roof top program and show only load capacity in geographical areas. The maps do not show distribution lines, voltage, existing capacity, potential capacity, etc.. Maps show mostly populated areas, not remote sites. For example, our Palmdale land does not show up in the red area, even though SCE’s formal comprehensive study later showed that we can connect to distribution lines with no upgrades required. The maps show only existing capacities and not potential capacities! Much more detail is needed. A power producer still has to get in contact with SCE engineering.

The opportunity for pre-application consultation with an SCE engineer is more illusory than real. First, it is either difficult or impossible to arrange such consultations. If an applicant is able to talk to an engineer, the engineer won't be able to tell you much without a study and the applicant is told it can't count on anything the engineer says.

al rosen
310 440 8001
310 491 9470 (NEW FAX)
310 699 7733 (cell)
Albyr24@gmail.com

May 31, 2011

Rachel Peterson
California Public Utilities Commission
Energy Division
505 Van Ness Avenue
San Francisco, CA 94102-3214
rpl@cpuc.ca.gov

Dear Ms. Peterson,

Southern California Edison Company (“SCE”) appreciates the Energy Division’s reconvening the Rule 21 Working Group and providing the opportunity to comment on Rule 21 priorities and next steps. Given the influx of interconnection applications resulting from new programs for renewable generation, ensuring Rule 21 works effectively has become an urgent matter.

From SCE’s perspective, the most pressing issue for the Rule 21 Working Group is the need to develop and codify in the tariff interconnection and study procedures for exporting generators. Among other issues for exporting generators, SCE urges consideration of the following:

- Revision of the Simplified Interconnection process to eliminate the current prohibition on exporting generators or development of a new fast track evaluation to include exporting generators that can be connected without interconnection studies;
- Development of an independent study process for generators that are not electrically interdependent with other earlier queued generators;
- Formation of a comprehensive cluster study process to study generators that are electrically interdependent with generators interconnecting under the Wholesale Distribution Access Tariff (WDAT) and California Independent System Operator (CAISO) tariff;
- Coordination among the queues for Rule 21, WDAT, and CAISO applicants;
- Creation of rules governing the publication of the Rule 21 queue to increase transparency for developers; and
- Creation of provisions for Deliverability Studies in accordance with CAISO tariffs to allow generators to qualify for Resource Adequacy.

SCE recommends that the Working Group focus on technical and process issues related to Rule 21 and not on interconnection incentives or specific programs (*e.g.*, issues such as eligibility for the Net Energy Metering (NEM) program). For example, the Working Group should consider the Rule 21 study process, including triggers for requiring studies, necessary types of studies, and realistic time requirements for studies. Technical issues for consideration should include guidance for combined technology systems, rating specifications, disconnect requirements, anti-islanding requirements for multiple projects connecting to a distribution circuit, and harmonic study and injection requirements. Other issues to consider include inadvertent export (allowed in the application process but not mentioned in Rule 21), “wheeling” of power when customers have dedicated substations, access requirements, and cost allocation.

With respect to administrative issues, SCE proposes that a formal process be implemented and followed. SCE has attached as an example Recommended Protocols for R.08-11-005 Workshops, which was used effectively last year in the workshop related to rule changes in General Orders 95 and 165. Whether the attached protocol is adopted or another one is created, SCE urges the Energy Division and Rule 21 Working Group participants to reach agreement regarding specific goals and timelines for the Working Group, in addition to defining discussion principles and the decision-making process, and setting forth procedures for communications, public notice, and information management. In SCE's experience, the implementation of a formal process has markedly improved the productivity of working groups by focusing the issues and leading to a better final product.

Further administrative suggestions by SCE include the formation of technical break-out groups and the separation of exporting generator issues from NEM customer issues. Because changes to Rule 21 must be consistent with technological developments and technical interconnection realities, SCE recommends narrowing of technical issues through discussions among technically qualified representatives of participants, assisted by knowledgeable facilitators from the Energy Division. SCE also believes that Working Group meetings would be most efficient if certain subcommittees or meetings are dedicated to exporting generator issues and other committees or meetings are focused on NEM customer issues. Within SCE, different groups manage these two segments, and SCE's experience is that many stakeholders are interested in one segment but not the other.

In addition to these general recommendations, SCE has identified in the Rule 21 Working Group Summary Notes (available at <http://www.cpuc.ca.gov/NR/rdonlyres/343DB239-91F1-459C-82F8-9E76075E96BD/0/Rule21WorkingGroupWorkshopNotes.pdf>) a few factual misstatements and points of confusion and provides the following clarification:

- On page 6, in the section describing SCE Presentation Notes, the second bullet reads, "Facilities that are not located near the load they are serving require transmission level interconnections." The sentence should instead read, "Facilities that are not located near the load they are serving may require transmission or distribution system upgrades."
- On page 6, in the Stakeholder Discussion section, one comment states that when distribution-only facilities are placed in the same queue as generators needing certification from CAISO, they must engage in transmission-level requirements. The comment ignores the fact that large distributed generators and aggregations of smaller distributed generators will have an impact at the transmission level, especially if interconnecting far from load centers.
- On page 7, the first bullet point states, "A lot of applications under WDAT are essentially at the transmission level." In fact, WDAT applicants interconnect at the distribution level.
- On page 7, in the Continued Stakeholder Discussion section, the fourth bullet reads, "Export and non-export is no longer a way of categorizing DG. All DG facilities export, including NEM facilities." This is incorrect. There are many non-export Rule 21 interconnections; the distinction between export and non-export generators is meaningful.

Finally, while SCE believes that the Rule 21 Working Group will ultimately achieve lasting interconnection reform, SCE supports PG&E's view that interim changes are necessary to

adequately and immediately address the influx of Qualifying Facility (QF) interconnection applications resulting from new procurement programs. Accordingly, SCE joins PG&E's request to establish an interim interconnection procedure for Rule 21 QFs signing new power purchase agreements that will allow the utilities to use the CAISO or WDAT for an interim period and to insert language in SCE's Rule 21 reflecting this procedure. The interim proposal is not intended to call into question the CPUC's jurisdiction over QF interconnections but rather to allow the interconnection process to proceed efficiently for new QF procurement programs and the existing and expanded California Renewable Energy Small Tariff (CREST) program. SCE urges the Commission to exercise its jurisdiction and require that new QF interconnections use the existing CAISO and WDAT interconnection procedures on an interim basis.

Sincerely,

Cindy Jacobs
Southern California Edison Company



FILED

08-13-10

04:59 PM

APPENDIX C

PHASE 2 WORKSHOP PROTOCOLS

Recommended Protocols for R.08-11-005 Workshops

1. PURPOSE OF WORKSHOP

The purpose of the workshop in R.08-11-005 is to collaboratively explore the proposed rule changes (PRCs) relating to General Orders 95 and 165, and other issues within the scope of Phase 2, and to the extent possible to agree on specific PRCs to be recommended for adoption by the Commission.

2. WORKSHOP REPORT

The final product of the workshop will be a written workshop report that documents the agreed-upon PRCs and -- if necessary -- alternative PRCs. The workshop report will be filed with the -Commission or otherwise made a part of the official record in this proceeding as directed by the assigned Administrative Law Judge (ALJ).

- 2.1 Each agreed-upon PRC and alternative PRC will include specific text proposed to be added, deleted or modified, and a statement of supporting rationale.

3. WORKSHOP PARTICIPANTS

Workshop "Participant" is defined as any representative of a party to this proceeding who participates in discussing one or more of the PRCs during one or more scheduled workshop meetings. A party may bring as many representatives to participate in the workshop as it deems necessary to address the issues. A primary contact/spokesperson for each party shall be designated for purposes of notices and document distribution.

4. WORKSHOP AGENDA

An agenda for each workshop meeting will be developed by the Participants starting at the beginning of the first meeting, and will be updated through the workshop meetings as agreed by the Participants. The agenda will specify the date, time, location and host /contact person for the meeting and will list the PRCs to be addressed at the meeting.

- 4.1 To the extent possible, PRCs requiring the presence of Participants with special qualifications or expertise are to be scheduled for discussion on the same or consecutive days.
- 4.2 The Participants may agree to defer a PRC if, during discussion, it becomes apparent that participants with special qualifications or expertise, not then present, are needed to adequately address the PRC.
- 4.3 A party represented by a single Participant may request that a PRC of particular interest to them not be addressed on a specific date if they

cannot be present on that date. Such request should be made as soon as the party's scheduling constraint becomes known to them, and all reasonable efforts shall be made to accommodate such requests.

5. DISCUSSION PRINCIPLES

- 5.1 The discussion of PRCs will be governed by the following general principles:
 - 5.1.1 Describe the rationale for the PRC. Specific circumstances at issue in the OIIs pending before the Commission will not be considered.
 - 5.1.2 Identify and understand the Participants' respective points of view, interests and desired outcomes relative to the PRC.
 - 5.1.3 Obtain (to the extent feasible) data that Participants believe is necessary to understand the issues and make an informed decision on the PRC.
 - 5.1.4 Address all interests insofar as possible.
- 5.2 During meetings, opportunities will be allowed for a brief ongoing evaluation of progress and process ("process checks").

6. DECISION MAKING PROCESS

- 6.1 Agreement should be sought utilizing the "levels of agreement" process:
 - 6.1.1 Agreement is defined as no votes at Level 2.
 - 6.1.2 Levels of agreement scale:
 - Level 1 - I support/can live with this PRC.
 - Level 2 - I do not support/cannot live with this PRC.
 - Level 3 - I abstain/am neutral.
 - 6.1.3 Each party shall state a single level of agreement, regardless of how many Participants it has brought to the workshop meeting.
 - 6.1.4 A "straw vote" to ascertain the level of support for, or opposition to, a PRC may be called for at any time and shall be held prior to any final vote.
 - 6.1.5 Tentative working agreements may be reached on parts of complex PRCs, subject to final agreement on the entire PRC.

- 6.1.6 If no party gives the PRC a “2”, the PRC is agreed upon as submitted. Otherwise the PRC is either:
 - 6.1.6.1 Submitted to a smaller working group or Committee to refine outside of the workshop process to be brought back for later consideration;
 - 6.1.6.2 Assigned to a Multiple Alternatives Process (MAP) in which one or more parties, individually or in small working groups, return to a later workshop meeting with alternative PRCs; or
- 6.1.7 If a PRC is assigned to a MAP but does not lead to agreement, the proponent(s) of each MAP alternative may submit their alternative(s), for a vote by workshop Participants. Each such alternative, together with the voting results and any statements of rationale Participants wish to provide regarding the alternative, will be included in the Workshop Report.
- 6.1.8 If a PRC or MAP alternative is not voted on by Participants or is withdrawn by its proponent(s) it will not be included in the Workshop Report.
- 6.2 Parties are responsible to have an informed Participant at each meeting who has authority to discuss the topics to be addressed in that meeting, and who will seek management input prior to each confirmation agenda in order to expedite the work of the workshop.
- 6.3 Any party that, without prior notice to the other parties, is absent from a meeting at which a PRC is agreed upon, is deemed to have abstained from the determination of levels of agreement, and has waived the opportunity to challenge the PRC or propose an alternative PRC. This protocol may be waived by agreement of the parties at a subsequent meeting in the event the party’s absence was due to circumstances beyond its control.
- 6.4 Agreed-upon PRCs will be placed on a confirmation agenda, to be addressed at the start of the subsequent group of meetings, in order to allow parties time to seek final approval of the PRCs by their respective managements, when such approval has been stated by parties to be necessary. Any party may remove any PRC from the confirmation agenda for further workshop consideration, based on their management’s direction.
- 6.5 Each Participant is responsible to keep his or her organization/constituency group(s) informed of the progress of the workshops and to timely seek advice, comments and authorization as required.

6.6 Participation by Proxy

Parties represented by a single Participant may designate another Participant to serve as their proxy for purposes of expressing levels of agreement, if they are unable to attend a workshop meeting. In order to utilize a proxy, the party must satisfy the following requirements:

- 6.6.1 The party shall notify the other parties by email or facsimile at least 1 business day prior to the meeting at which they expect to be absent;
- 6.6.2 The party shall provide clear directions to the proxy regarding any limitations on the proxy's authority, in the event the PRC is modified in the course of discussion; and
- 6.6.3 The proxy must inform the facilitator and Participants of their role at the beginning of the meeting.

7. COMMUNICATIONS AND PUBLIC NOTICE

- 7.1 Any or all Participants may meet or conference call among themselves between workshop meetings as desired or necessary to negotiate an advancement of their work.
- 7.2 Audio and video recording devices are not to be used in meetings for any purpose. Participants are encouraged to explore ideas freely and the only agreements are those explicitly reached.
- 7.3 The Facilitators shall be designated to keep the assigned ALJ informed of the dates, times, location and host contacts for upcoming workshop meetings, in time for that information to be posted on the Commission's website and to be periodically issued in rulings as the ALJ deems appropriate.

8. INFORMATION MANAGEMENT

- 8.1 A meeting summary will be prepared following each working group meeting stating:
 - 8.1.1 All Participants at the meeting, including their e-mail addresses;
 - 8.1.2 Key points of discussion, including PRCs discussed;
 - 8.1.3 Agreements, if any, with supporting rationale and vote tallies; and
 - 8.1.4 MAP proposals, if any.

- 8.2 The meeting summary will be prepared by a designated Participant. Meeting summaries will be available as soon as practicable and will be emailed to all Participants. The meeting summary will be reviewed for corrections by the Participants, preferably by email or teleconference between workshop meetings.
- 8.3 Information deemed worthy of distribution to Participants will also be posted to the GO 95/128 Rules Committee website: go95-rc.com.
 - 8.3.1 Workshop Participants, and the parties they represent, reserve all rights to preserve the confidentiality of information in their possession, and participation in the workshop shall not be implied or understood to constitute a waiver of such rights.

9. PARTICIPANT ROLES

- 9.1 The Facilitators
 - 9.1.1 Consistent with the Phase 2 scoping memo and any amendments to it, work on behalf of the Participants under the direction of the Participants;
 - 9.1.2 Make participation easier and encourage participation by all who wish to participate;
 - 9.1.3 Remind Participants of the protocols as necessary;
 - 9.1.4 Suggest strategies to move the discussion along, as appropriate;
 - 9.1.5 Consistent with the Phase 2 scoping memo and any amendments to it, carry out such other supportive activities as agreed upon by the Participants or as directed by the ALJ.
- 9.2 The Participants:
 - 9.2.1 Listen carefully, ask pertinent questions and educate themselves and others regarding the issues and interests that must be addressed, in a collaborative rather than confrontational manner.
 - 9.2.2 Fully and thoughtfully explore the issues before forming conclusions.
 - 9.2.3 Search for creative solutions that best serve the issues and interests that must be addressed.

10. WORKSHOP ACCESS AND ACCOMMODATIONS

Workshops shall be scheduled in locations that comply with the Americans with Disabilities Act.

May 31, 2011

Rachel Peterson
California Public Utilities Commission
Energy Division
505 Van Ness Avenue
San Francisco, CA 94102

RE: Written Comments on Agenda and Near-Term Priorities for Rule 21 Working Group

Dear Ms. Peterson,

Pursuant to your May 16th email, the Interstate Renewable Energy Council ("IREC") respectfully submits these comments regarding the agenda and near-term priorities for the Rule 21 Working Group.

IREC is a non-profit organization that has worked for nearly three decades to accelerate the sustainable utilization of renewable energy resources through policies that reduce barriers to renewable energy deployment. With funding from the United States Department of Energy's Solar Energy Technologies Program,¹ IREC has participated in renewable energy-related workshops, proceedings and rulemakings in over thirty-five states during the past three years. IREC addresses topics that directly impact the development of renewable energy resources, including net metering rules, interconnection standards for distributed generation, and community solar program rules. To capture the most evolved thinking on these policies, IREC has assembled model rules for each of these policies that incorporate "best practices" that have been adopted in jurisdictions across the United States.²

Lately, a number of calls for Rule 21 reform have emerged as a result of a policy and technical advances that have arisen since the Rule 21 Working Group last convened in 2008. Much of the movement to reform Rule 21 appears to be motivated by a desire to efficiently and cost-effectively interconnect systems participating in a wide range of new programs and policies in California that seek to promote distributed generation on both the customer side of the meter and on the utility side of the meter.

¹ http://www1.eere.energy.gov/solar/state_technical.html

² <http://irecusa.org/wp-content/uploads/2010/01/IREC-Interconnection-Procedures-2010final.pdf>

IREC agrees that it is an appropriate time for a reevaluation of Rule 21. Since the Rule 21 Working Group last convened in 2008, California utilities have had an opportunity to interconnect significantly more distributed generation. Likewise, utilities in other states have gained more experience interconnecting smaller-scale generators. There has also been an evolution in the codes and standards that provide the technical underpinnings for Rule 21. The lessons learned from these experiences and the latest thinking on relevant codes and standards should be taken into account by the Working Group and incorporated into Rule 21 as appropriate.

Below, IREC sets forth a proposal for how to divide the myriad relevant issues that may need to be addressed in undertaking a comprehensive reevaluation of Rule 21. The first section identifies four broad categories of issues for discussion and proposes a logical sequence for addressing these issues. The second section proposes a workshop-based process for collecting input from interested stakeholders and working to develop consensus around important modifications to Rule 21.

The Commission Should Undertake a Phased Review of Rule 21

CPUC slides from the recent Working Group meeting establish the following purpose for the group: “Host an open forum to build consensus for Rule 21 reforms to meet the technical needs and policy goals of interconnecting distributed generation to the utility distribution system.” In order to build consensus on the wide range of issues that may arise in this discussion, IREC proposes that the Commission establish a multi-phase process to address Rule 21 reform. In particular, and as set forth below, IREC believes there are three interconnection process-related issues that should each be addressed through separate workshops that are held sequentially. IREC also believes that the Commission should establish a separate, ongoing process that incorporates updated requirements as technical standards like IEEE 1547 evolve.

IREC recommends the first phase of a Rule 21 reevaluation focus on the application process and technical screens for simplified interconnection. A comprehensive look at the technical screens is appropriate at this time to ensure that the current screens reflect the most reasonable approach to ensuring grid safety and reliability and that they identify an appropriate range of projects for study taking these goals into account. As part of this discussion, IREC believes stakeholders should consider whether it would be appropriate to establish an abbreviated interconnection process for micro-inverter based generation systems that may be no larger than 1 or 2 kW.

Two examples, but by no means an exclusive list, of the technical screens that need to be reevaluated going forward are the 2nd Screen that excludes projects that export power across the point of common coupling and the 4th Screen that pushes projects that exceed 15% of peak load on a line section into supplemental review. As currently drafted, the 2nd Screen prohibits any system that exports power from proceeding through simplified interconnection, which will be particularly problematic

if the Commission seeks to use Rule 21 for wholesale systems going forward.³ In addition, the 4th Screen adopts a low penetration level above which additional study may be needed. IREC believes this screen is likely to act as a significant hurdle to achieving the state's renewable goals and that a more reasonable screen should be adopted. In addition to screens 2 and 4, IREC believes a reevaluation of the other technical screens should be undertaken to incorporate lessons learned from the considerable experience California and other states have gained from interconnecting distributed generation.

IREC proposes that a second phase of the Rule 21 Working Group examine the supplemental review process. Other than identifying a \$600 fee and a 20-day window for completion of the supplemental review, there is not much in Rule 21 that provides a clear picture on what such a review might entail.⁴ IREC is optimistic that the supplemental review process could be utilized to more effectively review projects that may require some types of upgrade but do not require a full study. The second phase of the Rule 21 Working Group should evaluate this possibility and help define a more appropriate scope for supplemental review.

Finally, IREC proposes that a third phase reevaluate the study process and the fees associated with that process. The Rule 21 study process is currently not well defined and does not address the timeframe for completing studies or how study and upgrade costs should be allocated. In addition, now that the CAISO and two of the utilities have moved their study processes over to a cluster process, there needs to be some consideration of how projects proceeding under Rule 21 should interact, if at all, with projects in the CAISO or IOU cluster studies. This is a relevant consideration given that two generators could seek interconnection to the same distribution system line section with one generator seeking interconnection through an IOU cluster study process and another seeking interconnection through Rule 21. Phase III should work to identify an appropriate scope and timeframe for interconnection studies. It should also address the costs for the study process and how best to allocate the cost of distribution system or network upgrades.

For the technical rules, IREC appreciate that these requirements are always evolving and they there needs to be an effective way to incorporate these changes into the Rule 21 Working Group. We believe it makes sense to provide a structure that allows for an ongoing evaluation of those issues, though not necessarily in the form of a series of in-person workshops.

The Commission Should Use a Workshop Process to Review Rule 21

For the three phases that focus on procedural reform, IREC proposes the following approach. First, IREC believes it is important for parties to have an opportunity to

³ Interstate Renewable Energy Council's Brief on Implementation of Senate Bill 32, Docket # R.08-08-009, March 7, 2011.

⁴ See Rule 21 C.1.c.3.

submit comments that identify specific issues that should be considered in that phase and on the specific reforms parties initially propose. Second, Staff can then use parties' comments to develop a workshop agenda that is focused on issues identified by the parties and that puts forth concrete proposals to build discussion around. Third, following the workshop, IREC proposes that Staff issue a report that identifies proposed reforms based upon the discussion from the workshop. Finally, parties should then be allowed to comment on Staff's report. In sum:

1. Submission of Pre-Workshop Comments
2. Workshop
3. Staff Report on Reforms
4. Comments on Staff Report

We hope that this process will provide a structure to ensure that the scope of issues can be addressed in a timely and constructive manner.

Conclusion

IREC appreciates the opportunity to submit these comments and looks forward to participating in the Working Group going forward.

/s/ Sky C. Stanfield

Sky Stanfield
KEYES & FOX, LLP
436 14th Street, Suite 1305
Oakland, CA 94612

For the Interstate Renewable Energy Council

California Public Utilities Commission
Energy Division
Rule 21 Working Group

Clean Coalition comments on
Rule 21 Workshop, April 29th 2011

Kenneth Sahm White, Analyst for Clean Coalition
May 31, 2011

Clean Coalition Comments on Rule 21 Reform

Introduction

The Clean Coalition is a California-based policy organization, part of Natural Capitalism Solutions, a non-profit entity based in Colorado. The Clean Coalition focuses on policies that deliver cost-effective and timely clean energy, including within the underserved “wholesale distributed generation” (WDG) market segment, which is comprised of wholesale generation projects interconnected to the distribution grid. WDG is a particular focus given the combination of cost-effective energy and economic benefits that it delivers, while at the same time avoiding all of the challenges associated with transmission build-outs. The Clean Coalition is active in proceedings at the California Public Utilities Commission, California Air Resources Board, California Energy Commission, the California Legislature, US Congress, the Federal Energy Regulatory Commission, and in various local governments around California.

The Clean Coalition strongly supports the reconvening of the working group for reform of the CPUC’s Rule 21 Interconnection Standard and welcomes this opportunity to submit comments.

Governor Brown has established a goal of 12,000 megawatts of distribution generation (DG) to help meet the 33% by 2020 renewable portfolio standard recently passed into law. To achieve this goal, California needs to dramatically improve its interconnection procedures for wholesale DG – the key component for meeting this 12,000 megawatt goal.

The utilities have recently reformed their WDAT interconnection procedures, which are FERC-jurisdictional. There are numerous major problems with the new procedures, however, as the Clean Coalition has described in its comments to the utilities during their stakeholder processes and in our Protests to FERC. Unfortunately, FERC rejected all but one of the concerns and protests submitted by all parties, including the Commission itself, IREC and the Clean Coalition. FERC did agree with the parties that data transparency is very important for improving the new interconnection procedures and FERC required that the utilities post comprehensive interconnection data on a monthly basis online, for 24 months.

These new data requirements imposed by FERC will be very helpful over time and we are optimistic that this increased data will help correct the problems we’ve identified – but it will take far too long for any improvements unless the Commission is proactive now.

The Clean Coalition has argued in requests for rehearing to FERC that FERC's overly deferential review and approval of the utility WDAT proposals was effectively an abdication of FERC's responsibility to regulate. By dismissing all but one of the concerns expressed by three parties, all of whom have great expertise in the areas addressed, FERC was not doing its job. It thus falls upon the Commission to do what it can to ameliorate the impacts of FERC's actions.

Rule 21 has previously led the way nationally in establishing distribution grid interconnection processes, with the use of screens and operating standards for simplified review of small systems. The Clean Coalition urges the Commission to update and expand on this foundation to allow expedited interconnection of vastly greater quantities of wholesale DG. Historically, advances from Rule 21 have been adopted in other interconnection standards, such as the WDATs, so breakthroughs from this Rule 21 revision process can be far reaching.

Discussion

There are numerous technical factors that must be addressed in the interconnection of generation to the distribution grid in order to maintain safe and reliable grid operation, and such factors are essential to consider in development of achievable policy goals. While it is critical to acknowledge technical limits, standards and procedures exist to support implementation of policy goals. As we move forward in updating Rule 21, we must maintain focus on the foreseeable demands of California's energy development and the intended outcome of this urgently needed revision – improving procedures to allow safe and cost effective integration of at least 1,500 MW of wholesale DG annually, in order to meet the 33% RPS with the appropriate level of wholesale DG. Any proposal that does not meet these criteria will not represent a workable standard.

Numerous foreign jurisdictions have already demonstrated that rapid deployment and grid integration of wholesale DG is readily achievable, and that high penetration levels are manageable. Solar PV is the most common example, particularly in Germany, which has deployed as much in the past two years as California seeks to deploy for all DG renewables in this entire decade.

Transparent and reliable market signals have driven Germany's remarkable deployment, with standard contracts, predefined power purchase pricing, and simplified interconnection procedures, as a recent KEMA study for the Energy Commission made clear. Economies of scale and increased experience have resulted in profitable wholesale

DG PV generation prices in Germany to below a California equivalent of 12¢/kWh (with no time of use adjustment, based on our calculations, which we're happy to share).

The Clean Coalition has been arguing for some time that Europe's experience with rapid WDG interconnection is highly relevant to California. . The KEMA study commissioned by the CEC and released two weeks ago backs up these claims, showing that there are not critical technical differences between the design and capacity of European distribution grids and California's. The salient differences are, rather, procedural and financial, with interconnection costing much more in California, both when it is rate-based and when it is not, and taking a lot longer.

Rule 21 interconnection procedures were previously revised to better accommodate net-metered generation, but interconnection of WDG (as opposed to net-metered generation) has emerged as the key bottleneck for WDG. As mentioned, the Governor has established a goal of 12,000 megawatts of distribution generation to help meet the 33% by 2020 renewable portfolio standard recently passed into law. To achieve this goal, California needs to dramatically improve its interconnection procedures for wholesale DG.

The WDAT interconnection procedures have incorporated advances originating in the current Rule 21, and have improved upon these in some significant respects. However, the recent revisions in WDAT failed to incorporate numerous critical recommendations made by the CPUC, the Clean Coalition, and other parties. Without these changes, the new WDAT procedures provide a highly problematic and very lengthy path for interconnection of WDG, with extremely limited potential for expedited review because the alternatives to the default cluster process are not viable.

We highlighted the numerous problems with the alternatives to the cluster process (Fast Track and Independent Study Procedure) in our recently filed Request for Rehearing to the Federal Energy Regulatory Commission (these comments apply to PG&E but our concerns about SCE's WDAT are very similar):

- A "poison pill" inserted after the completion of the stakeholder process that exposes Fast Track applicants to uncapped, undefined and indefinite cost liability that may result from distribution grid and network upgrades at literally any point in the future. It is highly unlikely that banks will finance renewable energy projects subject to this uncapped liability. New facts have come to light since our Protest of PG&E's WDT amendment, including increased developer concern about the poison pill provisions. We included in our comments a list of companies who believe this poison pill language will make Fast Track projects unfinanceable.

- An unworkable Screen 10 for the Fast Track expedited interconnection procedure due to the requirement that any distribution or network upgrades trigger an ISP or cluster study procedure for Fast Track applicants. The Commission makes important factual errors with respect to the viability of the Fast Track process, as described further below.
- Undefined criteria for the Independent Study Procedure (ISP) that prevent an applicant from having any idea of its potential for success before committing \$50,000 plus \$1,000 per megawatt for the application fee. If the ISP applicant fails, it must then wait for the next cluster window and pay an additional \$50,000 plus \$1,000 per megawatt fee and have literally nothing to show for its ISP application except a large hole in its bank account.
- A statement in the GIP itself that PG&E's entire distribution grid will "generally" be studied as one cluster, which will generally obviate the ISP entirely because if the entire grid is one cluster no proposed projects will be found to be electrically independent.
- Moreover, no timelines for completion of studies is included for the Independent Study Procedure, which may well give rise to a backlog of requests like that which prompted the reform efforts to begin with.

The failure of the utilities and FERC to address these concerns leaves the WDAT as a highly inadequate model for Rule 21 reform. Meeting the Governor's goal of 12 GW of DG requires expedited and predictable interconnection procedures, at reasonable cost, and the new WDATs don't provide these features.

FERC did agree with intervenors in the utilities' WDAT reform proceedings that data transparency is very important for improving the new interconnection procedures and FERC required that the utilities post comprehensive interconnection data on a monthly basis online, for 24 months. These new data requirements imposed by FERC will be very helpful over time and we are optimistic that this increased data will help correct the problems we've identified – but it will take far too long to improve interconnection for WDG unless the Commission is proactive now and revises Rule 21 such that it becomes an effective interconnection tariff for WDG.

The Clean Coalition argued in our Requests for Rehearing to FERC that FERC's overly deferential review and approval of the utility WDAT proposals was effectively an abdication of FERC's responsibility to regulate. By dismissing all but one of the concerns expressed by three parties, all of whom have great expertise in the areas addressed, FERC was not doing its job. It thus falls upon the Commission to do what it can to ameliorate the impacts of FERC's actions by improving Rule 21.

While Rule 21 has worked very well for net-metered project interconnection since its last revision, it lacks many key details for optimally interconnecting wholesale DG projects. For example, SCE's CREST program uses Rule 21 and this program is fraught with problems, many of which relate to interconnection. It is clear that Rule 21 needs some major modifications to be used effectively for wholesale interconnection.

The Clean Coalition urges the CPUC to reassert its jurisdiction over WDG interconnection, as far as current law allows. Given FERC's failure to exercise oversight of utility WDAT procedures, increased responsibility falls on the Commission to do what it can to improve WDG interconnection procedures.

We outline below our recommendations for improving Rule 21 such that it can become an efficient and reliable interconnection tariff for both net-metered and wholesale projects. Over time, we hope the Commission will require Rule 21 to be the preferred interconnection tariff for all wholesale DG.

Overview

Broadly speaking, the Clean Coalition supports interconnection processes that can handle the expected scale of interconnection requests in a timely and cost-effective manner, including:

- Clear and enforceable timelines (with full data transparency, including reporting of application processing results and reasons for missing any deadlines)
- Increased grid transparency that allows developers to know "what can go where" ahead of time, and gain some idea of likely interconnection costs before going through a lengthy interconnection study.
- Expedited interconnection options for resolving most common issues and upgrade requirements. This will generally mean Fast Track interconnection, which should be relaxed such that more projects can qualify – while ensuring grid reliability and safety.
- Standardization of interconnection costs for smaller projects (3 MW and smaller). This is a longer-term goal but should be worked toward.

Grid Data

Fully updated grid interconnection capacity information should be available, along the following lines:

- It should be clear what limits exist at each substation, on each circuit, and ultimately on each line segment, including current and pending interconnections.
- It should be predictable what standard categories of upgrades would be triggered by exceeding these limits.
- It should be reasonably predictable what the costs would be for each level of upgrades required, including backflow or interconnection directly to a substation or P-node.
- Information should be made available on planned capacity increases related to system upgrades and new loads.
- All grid information should be presented in improved map and spreadsheet formats with viewer/user search and rank order ability enabled

Screens

It is clear that the existing Rule 21 screens (analogous to the Fast Track screens for WDAT) are overly conservative in some cases, and on the other hand do not address some significant factors related to WDG that may need to be addressed, but can usually be handled with revised technical standards and little or no additional study.

The purpose of the screens is to define issues that will not require further study if they can be addressed in advance - either because the project would not trigger an issue, or it would allow more standard issues to be addressed with known requirements and limited fixed cost review, instead of requiring a more detailed interconnection study.

We recommend that the screens be improved along the following lines:

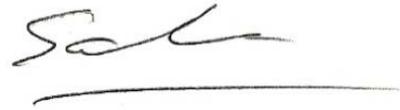
- Expedited project review be made available with fewer limitations. This would include expanded Fast Track access, but also intermediate levels of relatively simple studies where standard categories of system impact and upgrade are triggered by the screens.
- To support this, we'd like to see a clearly defined matrix between categories of projects and existing capacities at the point of interconnection, to determine exactly how much review or study is required, and ideally how much interconnection and upgrades will cost.

Goals for improved studies

- Back testing against prior applications to ensure that any interconnection reforms are improvements over the current procedures.
- Predictable and enforced costs and timelines for each study category, with review and accountability for efficient queue processing.
- Public queue information should be sufficiently detailed to identify what is and is not working and where tariff requirements are not being met. Examples of detailed information to be provided include:
 - Tracking, by project application, of all dates cited in Rule 21, such as Date Received, Date Deemed Valid, Date of Scoping Meeting, Date of Feasibility Study, Date of System Impact Study, Date of Facility Study, etc.
 - Tracking of projects that apply for Accelerated Options and information on which projects pass and which projects fail, including reasons for failure.
- ‘First come, first served’ rights to circuit capacity, with allowance for small projects that do not materially impact rights of queued projects to proceed without delay.
- If an Independent Study Procedure is included in the revised Rule 21, electrical independence needs to be clearly defined, with a strong emphasis on maximizing flexibility and capacity not yet allocated to existing or queued projects. i.e. a new project that assumes responsibility for any network upgrades and protection, without the benefit of conditionally allocated capacity or actions by prior queued projects, will be considered independent. Current project studies under Rule 21 or WDAT that have an effect upon line capacity should have that effect reflected in the published available capacity information.
- Independent review and timely and equitable dispute resolution when there is a question about how the standards are applied in the study process
- Last but not least, the standard interconnection agreements need to be revised to accommodate WDG instead of just net metering and excess sales, but this is well recognized by all parties.

The Clean Coalition appreciates the opportunity to submit these comments and we look forward to participating further in this stakeholder process. We will be submitting more detailed comments during the course of the stakeholder process.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Sahm", with a horizontal line underneath it.

Kenneth Sahm White
Economic and Policy Analyst
Clean Coalition

ATTACHMENT 7

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



April 27, 2011

Attn:

David Poster
Pacific Gas and Electric Company
(415) 973-1082

Brian Prusnek
Southern California Edison Company
(415) 929-5515

Hannon Rasool
San Diego Gas & Electric Company
(858) 654-1590

Subject: Energy Division Data Request for Available Capacity on the Utility Distribution System and the Interconnection Process, Timeline and Costs of Distributed Generation

Energy Division is beginning work on a distributed solar photovoltaic (PV) comparison tool, under Phase III of the CSI cost-effectiveness analysis. The tool will compare the net cost (net of location-specific avoided cost benefits) of solar PV up to 20 megawatts (MW). In addition, the study will assess the potential, in MW, of solar PV that can be readily interconnected to the utilities distribution grid.

The purpose of this data request is to assess the potential for distributed generation (DG) solar PV facilities up to 20 megawatts (MW) and to compile interconnection information for these systems that are interconnecting to the utility's distribution system at the utility side of the meter. **Please respond to this data request in its entirety by Friday, May 13, 2011.** Any questions related to this data request should be directed in a timely manner to Sean Simon at 415-703-3791 / svn@cpuc.ca.gov ; or Melicia Charles at 415-355-5502 / mvc@cpuc.ca.gov.

I appreciate your timely and serious attention to the data request.

Sincerely,

A handwritten signature in blue ink, appearing to read "Julie A. Fitch".

Julie A. Fitch
Director, Energy Division

Attachment: Data Request for Available Capacity on the Utility Distribution System and the Interconnection Process, Timeline and Costs of Distributed Generation

Through this two part data request Energy Division seeks the following information:

Part A: Distributed Solar PV Potential

In order to assess the DG potential for solar PV, Energy Division will build upon information utilities have been ordered to make available for the Renewable Auction Mechanism (RAM), namely: “the ‘available capacity’ at the substation and circuit level, which we define as the total capacity minus the allocated and queued capacity.”¹ Also, staff requests information about the utility’s investment plans that will support DG interconnection. This information should be provided in tabular form in an excel file. The full list of requested information is shown below:

Substation and Bank Information

- Substation ID
- Distribution Planning Area to which substation belongs (see definition below)
- Substation Name
- Substation Latitude
- Substation Longitude
- Substation Climate Zone
- Substation Bank Identifier (e.g. bank number) (potentially multiple entries per substation)
- Bank Capacity – Normal Rating (one entry per identified bank)
- Current DG capacity on bank, by type (MW) (potentially multiple entries per identified bank)
- Type of DG for each entry in previous field (e.g. solar, wind, etc.)
- Queued DG capacity on bank (one entry per identified bank) (potentially multiple entries per identified bank)
- Type of DG for each entry in previous field (e.g. solar, wind, etc.)

The capacity on individual banks, when summed, should provide the total capacity on the relevant substation.

Hourly Load Data

- One full calendar year of hourly load data by bank for each bank identified above. (most recent year available)
- If hourly load data can not be provided, a “second best” alternative would be, for each bank:
 - Peak load and timestamp
 - Minimum load and timestamp

¹ In Decision 10-12-048 the Commission required that the utilities provide this information in map format. See pages 70-71 and Conclusion of Law 44 in the Decision. Here, staff request that the information be compiled in tabular format in an excel file.

Distribution Planning Area Definition

Distribution Planning Areas (DPAs) are the aggregations of circuits and substations that the utility uses for distribution and local transmission capacity planning purposes. DPAs can be defined as the area served by a single distribution substation, but are more generally defined as an area encompassing several distribution substations and their energized circuits. The DPA should include those substations among which the utility can readily switch and balance loadings. An ideal planning area would have a uniform load distribution and load growth rate, a single primary distribution voltage, strong distribution ties among the substations within the area, and limited ties to substations outside the area. Substations and the loads they supply should not be considered part of the planning area, even if surrounded by other substations and loads, if there are no existing or potential ties to the area distribution system and no potential load transfers to or from it.

Distribution Investments

Separately, please provide the cost estimate and timeline for any investments to increase capacity for load growth (new transformers, feeder upgrades, etc) or investments to accommodate DG such as improved voltage control, etc., in each distribution planning area. This data may be provided in a table with the following fields:

- Distribution Planning Area Name
- Load forecast for DPA in forecasted peak MW for as many years as available
- Planned Investment Type (capacity investment or voltage control investment) (potentially multiple entries per distribution planning area)
- Year of Planned Investment (one entry for each planned investment)
- Capital cost of Planned Investment (one entry for each planned investment)

Part B: Interconnection Process, Timeline and Cost Information

Please provide this information in the excel spreadsheet accompanying this data request. Below, staff provide some guidance on completing sections that may be less clear.

Separate Costs for Each Upgrade

Most information for each project seeking interconnection will be entered in a single row of the spreadsheet. However, for projects that require multiple upgrades, we request that you provide information for each upgrade separately. In this case, multiple rows of the spreadsheet may be used. An example is shown below:

| Column C | Column E | Column AH | Column AI | Column AM | Column AN | Column AO | Column AP |
|----------------------------|--------------|---|--|-------------------------------------|------------------------------|-----------------------------|---|
| Interconnection Project ID | Project Name | Type and nature of each required upgrade (if multiple upgrades required, enter each on a separate line) | Estimated cost of each required upgrade (\$) | Other Cost of Upgrade (if any) (\$) | Description of "Other" costs | Total Interconnection Costs | Upgrade cost assigned to generator (\$) |
| 1 | Alpha | Upgrade 1 (describe) | \$ | \$ | e.g., Legal | \$ | \$ |
| | | Upgrade 2 (describe) | | | | \$ | \$ |
| | | Upgrade 3 (describe) | | | | \$ | \$ |
| 2 | Beta | Upgrade 1 (describe) | | | | \$ | \$ |
| 3 | Gamma | Upgrade 1 (describe) | | | | \$ | \$ |
| | | Upgrade 2 (describe) | | | | \$ | \$ |

In the example above, interconnection project "Alpha" requires 3 separate upgrades and additional costs for legal fees. While most of the project information appears in a single row of the spreadsheet, the information in columns AH:AP is provided in 3 separate rows; one for each upgrade and cost input. Interconnection project "Beta," in contrast, requires only a single upgrade, so all information for this project is contained in a single row of the spreadsheet.

Costs Assigned to Customer

Note that we request information on the portion of costs paid by the Generator. Column AG below will be equal to column AF if the customer pays 100% of the study fees. Likewise, column AP will be equal to column AO if the customer pays 100% of the upgrade cost. Columns AF,AG and columns AO,AP will provide the portion of each cost category paid by the utility.

| Column C | Column E | Column AF | Column AG | Column AH | Column AI | Column AM | Column AN | Column AO | Column AP |
|----------------------------|--------------|---------------------------------------|--------------------------------------|---|--|-------------------------------------|------------------------------|-----------------------------|---|
| Interconnection Project ID | Project Name | Total Interconnection Study Fees (\$) | Study Fees charged to generator (\$) | Type and nature of each required upgrade (if multiple upgrades required, enter each on a separate line) | Estimated cost of each required upgrade (\$) | Other Cost of Upgrade (if any) (\$) | Description of "Other" costs | Total Interconnection Costs | Upgrade cost assigned to generator (\$) |
| 1 | Alpha | \$ | \$ | Upgrade 1 (describe) | \$ | \$ | e.g., Legal | \$ | \$ |
| | | | | Upgrade 2 (describe) | | | | \$ | \$ |
| | | | | Upgrade 3 (describe) | | | | \$ | \$ |
| 2 | Beta | \$ | \$ | Upgrade 1 (describe) | | | | \$ | \$ |
| 3 | Gamma | \$ | \$ | Upgrade 1 (describe) | | | | \$ | \$ |
| | | | | Upgrade 2 (describe) | | | | \$ | \$ |

Costs Categorized by Type

Staff also request a breakdown of costs by category (equipment, labor, and other). In the table below, the sum of columns AL, AM, AN should be equal to column AP. Further, all interconnection project costs should be captured. Thus, if the interconnection project is made up of 3 separate upgrades, as shown, then the sum of the 3 upgrade costs in column AJ should equal the total project interconnection cost (with the exception of study fees, which are recorded elsewhere).

| Column AH | Column AJ | Column AK | Column AL | Column AM | Column AO |
|---|---|--|----------------------------|-------------------------------------|-----------------------------|
| Type and nature of each required upgrade (if multiple upgrades required, enter each on a separate line) | Actual cost of each required upgrade (total) (\$) | Capital/Equipment Cost of Upgrade (\$) | Labor Cost of Upgrade (\$) | Other Cost of Upgrade (if any) (\$) | Total Interconnection Costs |
| Upgrade 1 (describe) | \$ | \$ | \$ | \$ | \$ |
| Upgrade 2 (describe) | \$ | \$ | \$ | | \$ |
| Upgrade 3 (describe) | \$ | \$ | \$ | | \$ |
| Upgrade 1 (describe) | \$ | \$ | \$ | | \$ |
| Upgrade 1 (describe) | \$ | \$ | \$ | | \$ |
| Upgrade 2 (describe) | \$ | \$ | \$ | | \$ |

Facilities in Service Date

Please provide, if available, both the initially requested facilities in-service date and the current or final date. If the facility is not yet in service, then column Z below should provide the current requested in-service date (which may be equal to the initially requested date in column Y). If the facility is now in service, then column Z should provide the date on which the facility went into service.

| Column Y | Column Z |
|--|---|
| Initial Requested Facility In-Service Date | Current Requested Facilities In-Service Date or Actual Facilities In-Service Date |

Energy Division Interconnection Data Request for Projects up to 20 MW

Provide complete process, timeline and cost information for all requests made to the utility for distribution interconnection on the utility's side of the meter. For guidance on completing this spreadsheet, refer to the April 27, 2011 Energy Division Data Request or contact Sean Simon at 415-703-3791 / svn@cpuc.ca.gov ; or Melicia Charles at 415-355-5502 / mvc@cpuc.ca.gov.

Responses to this data request are due on May 13, 2011

**Interconnection Data Request for
Projects up to 20 MW**

Utility:

| Interconnection Project ID | Procurement Project ID (CPUC PDSR#) | Project Name | Seller Name | Procurement Program (if known) | Fuel / Technology |
|----------------------------|-------------------------------------|--------------|-------------|--------------------------------|-------------------|
| 1 | | Alpha | | | |
| 2 | | Beta | | | |
| 3 | | Gamma | | | |
| | | | | | |
| | | | | | |

CPUC Energy Division Data Request
 April 27, 2011

| Generator Capacity (MW) | Facility Location (County) | Facility Location State | Queue Position Date | Date Generator Submitted Interconnection Request (IR) | Date IR Deemed Complete | Reason for lag (if any) between IR submitted and deemed complete date | Interconnection Tariff Request Type |
|-------------------------|----------------------------|-------------------------|---------------------|---|-------------------------|---|-------------------------------------|
| | | | | | | | WDAT |
| | | | | | | | SGIP |
| | | | | | | | Rule 21 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

CPUC Energy Division Data Request
 April 27, 2011

| Study Group (e.g., Serial) | Current Phase | Interconnection Request Status | Reason for withdrawal (if known) | Interconnection Agreement Executed(Y/N) | Date Interconnection Agreement Executed |
|-------------------------------|--------------------------------|-----------------------------------|--|---|--|
| | Cluster Phase 1 | Active | | | |
| | Cluster Phase 2 | Complete | | | |
| | Feasibility Study | Withdrawn | | | |
| | System Impact Study | | | | |
| | Facilities Study | | | | |
| | Initial Review | | | | |
| | Supplemental Review | | | | |
| | Detailed Interconnection Study | | | | |

CPUC Energy Division Data Request
April 27, 2011

| Current point of Interconnection (substation or line) | Interconnection Point Voltage | Initial Requested Facility In-Service Date | Current Requested Facilities In-Service Date or Actual Facilities In-Service Date | Application Fees (\$) | Fast Track Eligible? | If fast track, pass or fail? |
|---|-------------------------------|--|---|-----------------------|----------------------|------------------------------|
| | | | | | | |
| | | | | | | |
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| | | | | | | |

CPUC Energy Division Data Request
April 27, 2011

| If project failed fast track, which screen(s) did it fail? | Date all interconnection studies were completed (if no interconnection studies required due to fast tracking, then "N/A") | Total Interconnection Study Fees (\$) | Study Fees charged to generator (\$) | Type and nature of each required upgrade (if multiple upgrades required, enter each on a separate line) | Estimated cost of each required upgrade (\$) |
|--|---|---------------------------------------|--------------------------------------|---|--|
| | | \$ | \$ | Upgrade 1 (describe) | \$ |
| | | | | Upgrade 2 (describe) | |
| | | | | Upgrade 3 (describe) | |
| | | \$ | \$ | Upgrade 1 (describe) | |
| | | \$ | \$ | Upgrade 1 (describe) | |
| | | | | Upgrade 2 (describe) | |
| | | | | | |
| | | | | | |

CPUC Energy Division Data Request
 April 27, 2011

| Actual cost of each required upgrade (total) (\$) | Capital/Equipment Cost of Upgrade (\$) | Labor Cost of Upgrade (\$) | Other Cost of Upgrade (if any) (\$) | Total Interconnection Costs | Upgrade cost assigned to generator (\$) |
|---|--|----------------------------|-------------------------------------|-----------------------------|---|
| \$ | \$ | \$ | \$ | \$ | \$ |
| \$ | \$ | \$ | | \$ | \$ |
| \$ | \$ | \$ | | \$ | \$ |
| \$ | \$ | \$ | | \$ | \$ |
| \$ | \$ | \$ | | \$ | \$ |
| \$ | \$ | \$ | | \$ | \$ |
| | | | | | |
| | | | | | |

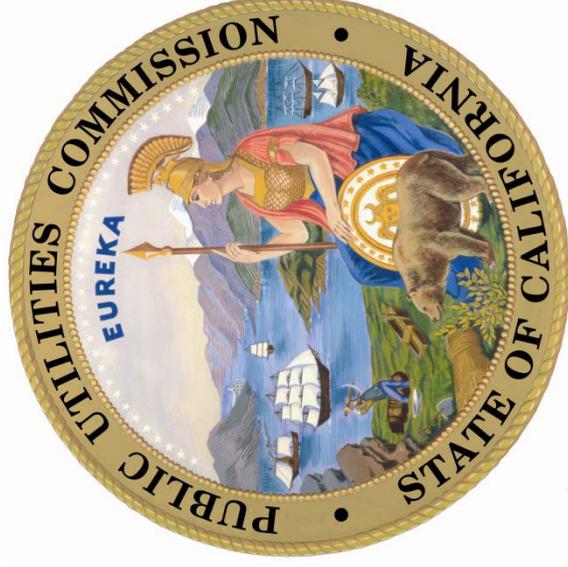
(END OF ATTACHMENT 7)

ATTACHMENT 8



Glossary and Resources

Rule 21 Working Group



California Public Utilities Commission
April 29, 2011





Contents

1. Basic Glossary
2. Tables: Customer and Wholesale Programs and Interconnection
3. CPUC Interconnection Decisions
4. Rule 21 Technical Screens and Methodology
5. Key websites





Basic Glossary (where noted, definitions are from Rule 21)

Distribution system – All electrical wires, equipment, and other facilities owned or provided by the utility, other than interconnection facilities, by which the utility provides distribution service to its customers (R21 Sec. H)

Net Energy Metering (NEM) – Metering for the receipt and delivery between the customer-generator and the utility pursuant to Public Utilities Code Section 2827 and utility Schedule NEM.

Point of Common Coupling (PCC) – The transfer point for electricity between the electrical conductors of the utility and the electrical conductors of the producer. (R21 Sec. H)

Point of Interconnection – The electrical transfer point between a generating facility and the distribution system. This may or may not be coincident with the point of common coupling. (R21 Sec. H)

Power Purchase Agreement – An agreement for the sale of electricity by the producer to the utility. (R21)

PURPA Qualifying Facilities – Public Utility Regulatory Policies Act (1978) requires investor-owned utilities (IOUs) to interconnect with and purchase power from Qualifying Facilities (QFs) at rates that do not exceed the IOU's avoided cost. Qualifying Facilities (QFs) are a distinct class of energy producer which consists of either small-scale producers of commercial energy who normally self-generate energy for their own needs but may have occasional or frequent surplus energy, or producers who happen to generate electric energy as a byproduct of other activities, for example a cogeneration or combined heat and power facility.

•Rule 21 – Tariff that sets metering and operating standards for self-generation facilities interconnected to the utility distribution system





Retail Programs and Interconnection

| Retail / Customer Load-Serving Program | Applicable Interconnection Tariff | Key websites |
|--|-----------------------------------|--------------|
|--|-----------------------------------|--------------|

California Solar Initiative Rule 21 <http://www.cpuc.ca.gov/puc/energy/solar/aboutsolar.htm>

<http://www.gosolarcalifornia.ca.gov/about/index.php>

Self-Generation Incentive Program Rule 21 <http://www.cpuc.ca.gov/PUC/energy/DistGen/sgip/>

New Homes Solar Partnership Rule 21 <http://www.gosolarcalifornia.org/about/nsnp.php>

Emerging Renewables Program Rule 21 <http://www.consumerenergycenter.org/erprebate/>





Wholesale Programs and Interconnection

| Wholesale / System Load-Serving Program | Applicable Interconnection Tariff | Key websites |
|---|-----------------------------------|---|
| Renewable Feed-In Tariffs | Mixed | http://www.cpuc.ca.gov/PUC/energy/Renewables/hot/feedintariffs.htm |
| PG&E | WDAT | http://www.pge.com/b2b/energysupply/wholesaleelectricssuppliersolicitation/standardcontractsforpurchase/ |
| SCE (“CREST Program”) | Rule 21 | http://www.sce.com/EnergyProcurement/renewables/crest.htm |
| SDG&E | Rule 21 | http://www.sdge.com/regulatory/AB1969.shtml |
| AB 1613-Combined Heat & Power | Rule 21 | http://www.cpuc.ca.gov/PUC/energy/Procurement/QF/ |
| Utility-Owned Solar PV Programs (all IOUs) | WDAT | http://www.cpuc.ca.gov/PUC/energy/Renewables/hot/Utility+PV+Programs.htm |
| Renewable Auction Mechanism | As appropriate | http://www.cpuc.ca.gov/PUC/energy/Renewables/hot/Renewable+Auction+Mechanism.htm |
| Renewable Portfolio Standard | WDAT | http://www.cpuc.ca.gov/PUC/energy/Renewables/index.htm |





CPUC Interconnection Decisions

| Decision | Title | Summary |
|--|---|---|
| Decision 00-11-001 November 2, 2000 http://docs.cpuc.ca.gov/published/Final_decision/3252.htm | INTERIM DECISION ADOPTING INTERCONNECTION STANDARDS | "This decision adopts the Rule 21 language recommended by the California Energy Commission (Energy Commission) on June 27, 2000 in its entirety, with one modification. Section 2.7 is modified as described herein. A Model Tariff is attached as Appendix A. Pacific Gas and Electric Company (PG&E), San Diego Gas & Electric Company (SDG&E), and Southern California Edison Company (SCE) are directed to file compliance advice letters to replace their existing Rule 21 with the Model Tariff, within 15 days of the effective date of this order." |
| Decision 00-12-037 December 21, 2000 http://docs.cpuc.ca.gov/published/Final_decision/4117.htm | DECISION ADOPTING INTERCONNECTION STANDARDS | "This decision approves the Rule 21 language adopted by the California Energy Commission (Energy Commission) on October 25, 2000 in its entirety, as conformed with Decision (D.) 00-11-001. A Model Tariff is set forth in Attachment A that incorporates changes made in D.00-11-001 into the Energy Commission recommendation. A model Interconnection Application Form and agreement are set forth in Attachments B and C. Pacific Gas and Electric Company (PG&E), San Diego Gas & Electric Company (SDG&E), and Southern California Edison Company (SCE) are directed to file compliance advice letters to replace their existing Rule 21 with the Model Tariff, Interconnection Application Form and Agreement, within 15 days of the effective date of this order." |





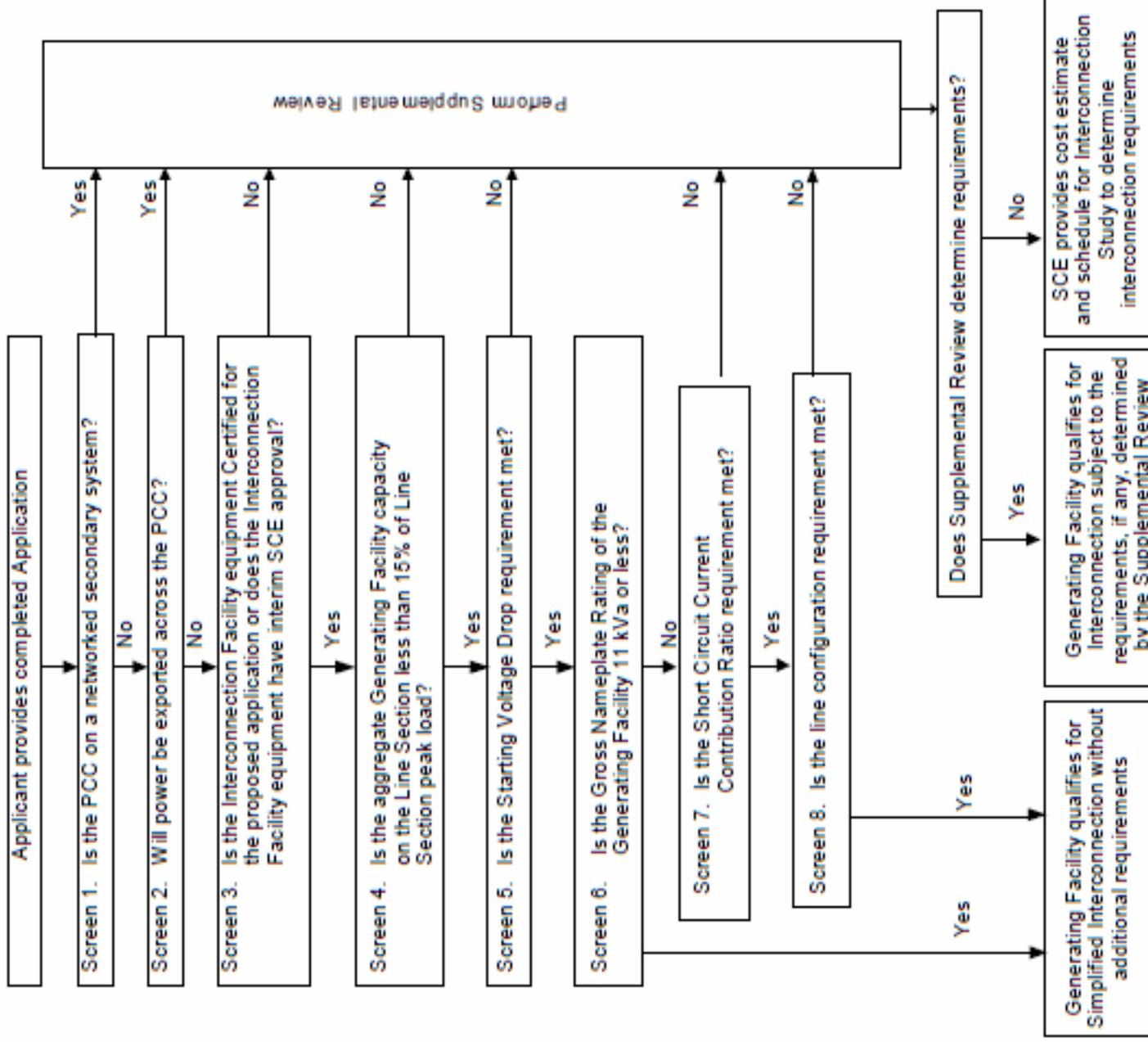
CPUC Interconnection Decisions (cont.)

| Decision, Date, Link | Title | Summary Paragraph |
|---|---|--|
| Decision 01-07-027 July 12, 2001 http://docs.cpuc.ca.gov/published/FINAL_DECISION/8823.htm | INTERIM DECISION ADOPTING STANDY RATE DESIGN POLICIES | <p>“This decision is part of a broader consideration of rules and policies affecting the deployment of onsite generation facilities. Such facilities are “onsite” in the sense that they are located on or in close proximity to the property of the customer or customers whose load the facilities are designed to serve. Here, we adopt interim standby rate design policies for onsite generation facilities that are interconnected to and operate in parallel with the distribution system in accordance with Rule 21.”</p> |
| Decision 02-03-057 March 21, 2002 http://www.energy.ca.gov/distgen/interconnecton/CPUC_SECTION-2827.PDF | OPINION INTERPRETING PUBLIC UTILITIES CODE SECTION 2827 | <p>“Generators eligible for net energy metering under Pub. Util. Code § 2827 are exempt from paying for costs associated with interconnection studies, distribution system modifications, or application review fees.”</p> |
| Decision 05-08-013 August 25, 2005 http://docs.cpuc.ca.gov/PUBLISHED/FINAL_DECISION/48945.htm | INTERIM OPINION ADOPTING CHANGES IN INTERCONNECTION RULES FOR DISTRIBUTED GENERATION | <p>“This decision adopts changes to rules governing interconnections between distribution systems of electric utilities and distributed generation (DG) facilities, which are power generators owned and operated by customers and which may provide power to the utility. Our order instituting this rulemaking stated our intent to consider such issues as they relate to metering requirements, interconnection fees and costs, and resolution of disputes between DG developers and utilities, among other things. We raised these issues hoping to simplify tariff rules, promote a fair allocation of cost responsibility and promote the development of cost-effective DG projects generally. Many of the tariff changes we order today have recently been adopted formally in a report issued by the California Energy Commission (CEC).”</p> |





Rule 21 Technical Screens and Methodology





Key Websites

CPUC Rule 21 Working Group:

<http://www.cpuc.ca.gov/PUC/energy/DistGen/rule21.htm>

CEC Rule 21 Working Group History:

<http://www.energy.ca.gov/distgen/interconnection/interconnection.html>

CEC Distributed Energy Resource pages, including California Interconnection Guidebook and Draft Supplemental Review Guideline:

<http://www.energy.ca.gov/distgen/index.html>



ATTACHMENT 9



Rule 21 Working Group Workshop

Rule 21 Working Group Technical Subcommittee Meeting

Rule 21 Working Group Business Practices Subcommittee Meeting

Participation Information:

Rule 21 Working Group Workshop

Friday, August 19, 2011

9:00 a.m.-12:00 p.m.

California Public Utilities Commission Auditorium
505 Van Ness Avenue, San Francisco, California

Off-site Attendees:

The Rule 21 Working Group Workshop will be webcast, and will be available to watch in real-time and in archived form at www.californiaadmin.com/cpuc.shtml. Webcast participants can email questions during the workshop to Kace Fujiwara at kfl@cpuc.ca.gov.

Rule 21 Working Group Technical Subcommittee Meeting

Friday, August 19, 2011

1:00 p.m.-4:00 p.m.

California Public Utilities Commission Courtyard Room

Off-site Attendees:

Off-site attendees may participate in the Technical Subcommittee Meeting by phone. The call-in information will be sent to persons who have RSVP'd for the meeting. Participants can RSVP at <https://ia.cpuc.ca.gov/rule21>.

Rule 21 Working Group Business Practices Subcommittee Meeting

Tuesday, August 23, 2011

1:00 p.m.-4:00 p.m.

California Public Utilities Commission Courtyard Room

Off-site Attendees:

Off-site attendees may participate in the Technical Subcommittee Meeting by phone. The call-in information will be sent to persons who have RSVP'd for the meeting. Participants can RSVP at <https://ia.cpuc.ca.gov/rule21>.

Materials:

All materials for the above three meetings will be posted on the CPUC's Rule 21 website as of August 18, 2011, at <http://www.cpuc.ca.gov/PUC/energy/DistGen/rule21.htm>. Participants will need to download the presentation materials separately.

Overview and Context:

Rule 21 is the interconnection tariff under the jurisdiction of the California Public Utilities Commission (CPUC) that applies to non-utility-owned self-generation interconnecting to the distribution grid controlled by investor-owned utilities (IOUs). It was first developed in the 1980s, and, since being revised in 2000, it has functioned well to interconnect self-generating facilities that primarily serve onsite customer load. California utilities have interconnected more than 83,000 distributed generating facilities using Rule 21, the vast majority serving onsite customer load.

From approximately 2009 to the present, under direction from the California Legislature, the CPUC has implemented several major utility procurement programs designed to incentivize the development of generating facilities sized 20 megawatts (MW) and below, many of which will be interconnected at the distribution level and sell power to the host utility and distribution service provider. These programs include the Renewable Auction Mechanism (RAM), the IOU Solar Photovoltaic (PV) programs, the renewable feed-in tariff, and the efficient combined heat and power (CHP) feed-in tariff. The Qualifying Facilities and Combined Heat and Power Settlement (QF Settlement) approved in D.10-12-035 may present additional procurement pathways for new and existing QFs sized 20 MW or below.

The rules of the above procurement programs are different with respect to the applicable interconnection tariff, and generators submitting interconnection requests under these programs may have a point of interconnection located on either the distribution or transmission grid. Marketplace confusion has resulted about the appropriate reach and applicability of Rule 21. In response, the Commission hosted the April 29, 2011 Rule 21 Working Group Workshop (April 2011 Workshop).

Since the April 2011 Workshop, certain interconnection-related proceedings and decisions have moved forward:

- The QF Settlement makes available a range of new procurement pathways to new and existing QFs, and codifies that the must-purchase obligation under PURPA now applies only to QFs sized 20 MW and under in California. The Final Effectiveness Date for the QF Settlement is forthcoming.
- In Rulemaking 11-05-005, the CPUC will modify the renewable feed-in tariff (Public Utility Code § 399.20) as mandated in Senate Bill 32 (Negrete McLeod, 2009). A

proposed decision is anticipated by December 2011.

- Draft Resolution E-4414 implements the RAM program. The CPUC is scheduled to consider Resolution E-4414 on August 18, 2011, and if approved, the first RAM auction will take place in Q3/Q4 2011.
- The efficient CHP tariff, implementing AB 1613, has been filed in draft form by the IOUs and will be considered by the CPUC in Q3 2011.

Problem Statement:

The core problem is that Rule 21 is failing to accommodate interconnection of generators to the distribution grid with the efficiency needed to achieve California's 33% Renewable Portfolio Standard (RPS) mandate, or Governor Brown's proposal for interconnecting 12,000 MW of distributed energy resources by 2020. At the April 2011 Workshop, participants identified a number of specific technical and business practices-related deficiencies:

- Lack of clear identification, from an engineering perspective, of generators that possess and do not possess transmission-level dependencies that are meaningful for interconnection;
- Lack of clear engineering support for the amount of interconnected generating capacity possible given safety and reliability needs and requirements;
- Lack of study methodology for interconnection of generators seeking to continuously export part or all of their output to the host utility; and
- Lack of tariff provisions associated with interconnecting such generators, including but not limited to:
 - Realistic, reasonable, and transparent technical review and engineering study time frames;
 - A pathway for the generator seeking interconnection to the distribution grid to secure resource adequacy value;
 - Methods, such as security postings, to ensure that queued projects are viable;
 - A cost allocation methodology where two or more generators trigger distribution system upgrades;
 - A queue management system to ensure fair treatment of all generators; and
 - A standard interconnection agreement for continuous export.

Rule 21 Working Group Goal:

The goal of the Rule 21 Working Group is to develop the technical and practical material that will form the substantive basis for Commission decisions reforming Rule 21 to provide for efficient, fair interconnection of generators to the distribution grid.

Workshop Objectives:

CPUC has developed draft procedures, set out in the rest of these materials, that includes a Rule 21 Working Group participation protocol, scope of work, phasing, subcommittee, and meeting schedule (jointly, Rule 21 Working Group Procedures), CPUC's intent is for the Rule 21 Working Group Procedures to serve as a structure for the Rule 21 Working Group to conduct its work for the remainder of 2011. CPUC has two objectives for this workshop:

- 1) Communicate CPUC's vision for Rule 21 reform to accommodate generators seeking interconnection to the distribution grid, and the formal and informal proceedings by which CPUC will develop the substance of such reform.
- 2) Discuss, modify, and affirm the proposed Rule 21 Working Group Procedures.

Detailed Agenda: Rule 21 Working Group
Friday, August 19, 2011
9:00 a.m. – 12:00 p.m.
CPUC Auditorium

9:00 – 9:30 AM

I. Overview

- Introductions
- Housekeeping
- Workshop objectives

9:30-10:30 AM

II. Update: CPUC, IOU, and Marketplace Actions Affecting Interconnection

- IOU Advice Letters proposing interim modification of Rule 21 for new PURPA QFs, renewable feed-in tariff participants, and other procurement programs
- CPUC Proceeding (Rulemaking 11-05-005) to implement changes to Public Utility Code § 399.20 (Renewable Feed-in Tariff)
- AB 1613 CHP Program: CPUC tariff approval
- QF Settlement: New procurement pathways for new and existing PURPA QFs <= 20 MW
- RAM: Resolution establishing auction terms

10:30-11:45 AM

III. Discussion: Review, Revise, Affirm Rule 21 Working Group Procedures

- A. Problem Statement
- B. Proposed Rule 21 Working Group Goal
- C. Proposed Rule 21 Working Group Protocol

D. Proposed Rule 21 Working Group Scope of Work

E. Proposed Rule 21 Working Group Technical Subcommittee Phasing and Meeting Schedule

F. Proposed Rule 21 Working Group Business Practices Subcommittee Phasing and Meeting Schedule

11:45 – 12:00 PM

IV. Wrap-up

- Summary, next steps

Rule 21 Working Group Procedures Protocol, Subcommittee Scopes of Work and Phasing, and 2011 Meeting Schedule

1. Rule 21 Working Group Purpose

The purpose of the Rule 21 Working Group is to serve as an open forum to build consensus for Electric Rule 21 tariff (Rule 21) reforms to meet the technical needs and policy goals of interconnecting generating facilities to the utility distribution system.

2. Rule 21 Working Group Work Products

The work products of the Rule 21 Working Group and its Technical and Business Practices Subcommittees will be a series of written reports that document agreed-upon proposed rule changes (PRCs) to Rule 21 within the scope set out here. Agreed-upon PRCs are recommended to the investor-owned utilities as the subject of Rule 21 modifications to be accomplished by appropriate California Public Utilities Commission (Commission) procedure. The Rule 21 Working Group envisions that the Commission will consider all PRCs in some type of formal proceeding. Where consensus on a PRC cannot be reached, the Rule 21 Working Group may develop a PRC and an alternate PRC. Each agreed-upon PRC and alternate PRC, if any, will include specific text proposed to be added, deleted, or modified, and a statement of supporting rationale, including pros and cons, for presentation to the Commission.

3. Rule 21 Working Group Participants

A “Participant” in the Rule 21 Working Group is defined as any representative of an entity who participates in discussing one or more of the PRCs during one or more scheduled meetings. Any entity may bring as many Participants to meetings as it deems necessary to address the issues. A primary contact for each entity shall be designated for purposes of notices and document distribution.

4. Rule 21 Working Group Facilitator

Staff of the California Public Utilities Commission’s Energy Division will serve as Facilitator of all Rule 21 Working Group meetings. The Facilitator will collaborate with Participants to develop meeting agendas, record meeting minutes, write reports, and write PRCs.

5. Guiding Principles for Rule 21

The guiding principles for Rule 21 will be:

- a. Rule 21 provides for simplified interconnection for self-generating facilities offsetting onsite load.
- b. Rule 21 provides for efficient interconnection for all generators that export to the host utility, taking into account the generator's location on the grid, relationship to load, and relationship to other generators.
- c. Rule 21 provides clear and transparent rules, protocols, and processes.
- d. Rule 21 is generation technology-neutral.
- e. Rule 21 is uniform statewide.
- f. Rule 21 operating standards will ensure that grid safety and reliability is maintained or improved.

The Rule 21 Working Group will apply these guiding principles in its reports and PRCs.

6. 2011 Scope of Work

The Rule 21 Working Group Scope of Work is divided into two subcommittees. The Technical Subcommittee will address engineering-related reforms to Rule 21. The Business Practices Subcommittee will address the Rule 21 reforms required to implement the engineering reforms. The Scope of Work for each subcommittee is divided into Phase 1 and Phase 2 issues. Phase 1 issues are high-priority Rule 21 reforms that will aid in reducing current marketplace interconnection problems. Phase 2 issues represent longer-term Rule 21 reforms aimed at aligning interconnection with procurement program design and grid infrastructure planning.

- a. Scope of Work for Technical Subcommittee Phase 1
 - i. Determine the level at which the transmission system impact of the aggregate of the distribution-connected generators on a distribution circuit or segment can be considered negligible for purposes of interconnection, considering any of the following:
 - (1) From an engineering standpoint, whether areas in the distribution system exist in which the interconnection of distribution-level generators will not have a significant transmission system impact;
 - (2) From an engineering standpoint, whether areas in the distribution system exist in which the interconnection of distribution-level generators may have a considerable impact on generators presently in the utility's Wholesale Distribution Access Tariff queue, but certain

conditions exist that permit a reduced or streamlined engineering study for proposed generators;

- (3) From an engineering standpoint, whether areas in the distribution system exist that may have dependencies with generators presently in the utility's Wholesale Distribution Access Tariff queue, and certain conditions require full interconnection study.
- ii. Identify the electrical characteristics of similar interconnection requests to categorize interconnection types and challenges, and develop standardized methods of treatment, including:
 - (1) Standardized technical criteria to identify groups of generators or areas of the distribution system;
 - (2) Standardized engineering study methodologies for similarly situated generators;
 - (3) Other.
 - iii. Develop an interconnection standard for safe and reliable interconnection of distributed generation to the distribution system that supports capacity penetration levels exceeding the current thresholds in Rule 21, including:
 - (1) Define the potential generating capacity of a distribution circuit or segment in terms of:
 - A relationship of the proposed generation's ampacity (peak capacity) rating to the peak load on the distribution circuit or segment;
 - A relationship of the proposed generation's ampacity rating to the minimum daytime load on the distribution circuit or segment (assuming the minimum daytime load is tracked);
 - The rated ampacity of existing distribution equipment along with existing equipment ratings and programmable settings;
 - The rated ampacity of existing distribution equipment with modified equipment ratings and programmable settings;
 - Planned upgrades to distribution equipment's peak ampacity;

- Planned major upgrades to distribution equipment's ampacity;
 - Other.
- (2) Develop data from recent utility experience with interconnecting higher penetration levels;
 - (3) Develop screens for use in Rule 21 Supplemental Review process that identify reduced or streamlined interconnection studies necessary to complete interconnection;
 - (4) Develop data from recent research advances, case studies from other locations, and new and emerging technologies regarding interconnection higher penetration levels;
 - (5) Identify operating standards, with particular focus on preventing unintentional islanding, to be applied where multiple inverters are located on the same distribution circuit or segment, including identification of certification process;
 - (6) Develop technical criteria embodying new parallel operation standards that create a transparent path to interconnection to the distribution system;
 - (7) Other.

Phase 2

- i. Identify existing and planned technology upgrades, including advanced metering infrastructure and inverter technologies that will provide improved data collection regarding generator output, power factor, and other data;
 - ii. Other.
- b. Scope of Work for Business Practices Subcommittee Phase 1
- i. Develop realistic, reasonable, and transparent time frames for application of technical criteria, completion of engineering studies, and other aspects of technical review of interconnection requests;
 - ii. Develop methods to ensure that queued generators seeking interconnection to the distribution grid are viable projects;

- iii. Develop a cost allocation methodology where two or more generators catalyze distribution system upgrades;
- iv. Develop a queue management system to ensure fair treatment;
- v. Develop a standard interconnection agreement for continuous export;
- vi. Develop consistent methodology for calculating the generating capacity of existing generators interconnected to the distribution grid;
- vii. Other.

Phase 2

- i. Identify Rule 21 queue and interconnection cost information capable of publication by utilities that will promote marketplace transparency, taking into account confidential vs. non-confidential information;
- ii. Compare and develop recommendations for aligning texts of Rule 21 and standard interconnection agreements among utilities;
- iii. Other.

7. Rule 21 Working Group Meetings

Rule 21 Working Group meetings include meetings of the Technical and Business Practices Subcommittees and the broader Rule 21 Working Group. An agenda for each meeting will be developed by the Facilitator in collaboration with the Participants, and circulated to all Participants at least three business days before the meeting. The agenda will specify the date, time, location and contact person for the meeting and will list the PRCs to be addressed at the meeting.

Participants may choose whether to participate in person or by phone, webcast, or other form of off-site participation as available technology permits.

To the extent possible, meetings that will discuss PRCs requiring the presence of Participants with special qualifications or expertise will be scheduled to accommodate those Participants.

The Participants may agree to defer a PRC if, during discussion, it becomes apparent that participants with special qualifications or expertise, not then present, are needed to adequately address the PRC.

8. Discussion Principles

Any Participant in a Rule 21 Working Group meeting may put forward a PRC or an alternative PRC.

The discussion of PRCs will be governed by the following general principles:

- a. Describe the rationale for the PRC.
- b. Identify and understand the Participants' respective points of view, interests and desired outcomes relative to the PRC.
- c. Obtain (to the extent feasible) data that Participants believe is necessary to understand the issues and make an informed decision on the PRC.
- d. Address all interests to the extent possible.

9. Consensus-Building Process

Consensus will be sought at all meetings on PRCs and/or alternative PRCs.

A report from a meeting will discuss any PRC and alternative PRC. Where applicable, the report will discuss why consensus could not be achieved and the Facilitator's determination of the appropriate next steps.

Entities are responsible to have an informed Participant at each meeting who has authority to discuss the topics to be addressed in that meeting, and who will seek management input beforehand in order to expedite the work of the Rule 21 Working Group.

Each Participant is responsible for keeping the entity he or she represents informed of the progress of the meetings and to timely seek advice, comments and authorization as required.

Entities represented by a single Participant may designate another Participant to serve as their proxy for purposes of expressing levels of consensus if they are unable to attend a meeting. In order to utilize a proxy, the entity must:

- a. Notify the other entities and the Facilitator by e-mail at least 1 business day prior to the meeting at which they expect to be absent;
- b. Provide clear directions to the proxy regarding any limitations on the proxy's authority, in the event the PRC is modified in the course of discussion; and

- c. The proxy must inform the Facilitator and Participants of their role at the beginning of the meeting.

10. Communications and Public Notice

Any or all Participants and the Facilitator may meet or hold a conference call among themselves between meetings as desired or necessary to negotiate an advancement of their work.

Audio and video recording devices will not be used in Rule 21 Working Group meetings. Participants are encouraged to explore ideas freely and the only agreements are those explicitly reached.

The Facilitator will maintain a master calendar of dates, times, locations, and contact persons for upcoming Rule 21 Working Group meetings. The Facilitator will notify entities of upcoming meetings via e-mail, post the calendar on the Commission's Rule 21 webpage (<http://www.cpuc.ca.gov/PUC/energy/DistGen/rule21.htm>), and notice meetings of the full Rule 21 Working Group in the Commission's Daily Calendar.

11. Information Management

Meeting minutes will be prepared following each meeting, and will contain, as appropriate:

- a. All Participants present at the meeting, including their e-mail addresses;
- b. Key points of discussion, including PRCs and alternative PRCs;
- c. Areas of consensus, if any, with supporting rationale; and
- d. Next steps where agreement could not be reached.

Meeting minutes will be prepared by a designated Participant. Meeting minutes will be available as soon as practicable and will be e-mailed to all Participants and posted to the Commission's Rule 21 webpage. The meeting minutes will be reviewed for corrections by the Participants.

12. Participant Roles

The Facilitator works to achieve consensus among the Participants on the Scope of Work, facilitates participation by all entities that wish to participate, carries out related supportive activities, and reminds Participants of this protocol as necessary.

The Participants listen, ask pertinent questions, and educate themselves and others regarding the issues and interests in a collaborative rather than confrontational manner, fully explore the issues before forming conclusions, and search for creative solutions that best serve the issues and affected interests.

13. Meeting Access and Accommodations

Meetings will be scheduled in locations that comply with the Americans with Disabilities Act.

14. Technical Subcommittee Meeting Schedule to Address Phase 1 Issues

See calendar attachment.

One or more Technical Subcommittee meetings in October-November 2011 may be coordinated with a Rule 21 Working Group or Re-DEC workshop.

15. Technical Subcommittee Meeting Schedule to Address Phase 2 Issues

To be determined.

16. Business Practices Subcommittee Meeting Schedule to Address Phase 1 Issues

See calendar attachment.

One or more Business Practices Subcommittee meetings in October-November 2011 may be coordinated with a Rule 21 Working Group or Re-DEC workshop.

17. Business Practices Subcommittee Meeting Schedule to Address Phase 2 Issues

To be determined.

| September 2011 | | | | | |
|----------------|---|---|---|-----|---------|
| Mon | Tue | Wed | Thu | Fri | Sat/Sun |
| | | | 1 | 2 | 3 |
| | | | | | 4 |
| 5 | 6 | 7 | 8 Technical Subcommittee Meeting 1:00-4:00 p.m. CPUC Auditorium Participation: in-person, phone | 9 | 10 |
| | | | | | 11 |
| 12 | 13 | 14 Business Practices Subcommittee Meeting 1:30-4:30 p.m. CPUC Courtyard Room Participation: in-person, phone | 15 | 16 | 17 |
| | | | | | 18 |
| 19 | 20 | 21 | 22 Technical Subcommittee 1:00-4:00 p.m. CPUC Courtyard Room Participation: in-person, phone | 23 | 24 |
| | | | | | 25 |
| 26 | 27 Business Practices Subcommittee 1:00-4:00 p.m. CPUC Auditorium Participation: in-person, phone | 28 | 29 | 30 | |

| October 2011 | | | | | |
|--------------|--|-----|--|-----|---------|
| Mon | Tue | Wed | Thu | Fri | Sat/Sun |
| | | | | | 1 |
| | | | | | 2 |
| 3 | 4 | 5 | 6 Technical Subcommittee 1:00-4:00 p.m. CPUC Courtyard Room Participation: in-person, phone | 7 | 8 |
| | | | | | 9 |
| 10 | 11 Business Practices Subcommittee 1:00-4:00 p.m. CPUC Courtyard Room Participation: in-person, phone | 12 | 13 | 14 | 15 |
| | | | | | 16 |
| 17 | 18 | 19 | 20 Technical Subcommittee 1:00-4:00 p.m. CPUC Auditorium Participation: in-person, phone | 21 | 22 |
| | | | | | 23 |
| 24 | 25 Business Practices Subcommittee 1:00-4:00 p.m. CPUC Auditorium Participation: in-person, phone | 26 | 27 | 28 | 29 |
| | | | | | 30 |
| 31 | | | | | |

| November 2011 | | | | | |
|---------------|--|-----------|--|-----------|-----------|
| Mon | Tue | Wed | Thu | Fri | Sat |
| | 1 | 2 | 3 Technical Subcommittee 1:00-4:00 p.m. CPUC Courtyard Room Participation: in-person, phone | 4 | 5 |
| | | | | | 6 |
| 7 | 8 Business Practices Subcommittee 1:00-4:00 p.m. CPUC Courtyard Room Participation: in-person, phone | 9 | 10 | 11 | 12 |
| | | | | | 13 |
| 14 | 15 | 16 | 17 Technical Subcommittee 1:00-4:00 p.m. CPUC Auditorium Participation: in-person, phone | 18 | 19 |
| | | | | | 20 |
| 21 | 22 Business Practices Subcommittee 1:00-4:00 p.m. CPUC Courtyard Room Participation: in-person, phone | 23 | 24 | 25 | 26 |
| | | | | | 27 |
| 28 | 29 | 30 | | | |

| December 2011 | | | | | |
|---------------|---|-----------|---|-----------|-----------|
| Mon | Tue | Wed | Thu | Fri | Sat |
| | | | 1 Technical Subcommittee 1:00-4:00 p.m. CPUC Courtyard Room Participation: in-person, phone | 2 | 3 |
| | | | | | 4 |
| 5 | 6 Business Practices Subcommittee 1:00-4:00 p.m. CPUC Courtyard Room Participation: in-person, phone | 7 | 8 | 9 | 10 |
| | | | | | 11 |
| 12 | 13 | 14 | 15 Technical Subcommittee 1:00-4:00 p.m. CPUC Courtyard Room Participation: in-person, phone | 16 | 17 |
| | | | | | 18 |
| 19 | 20 | 21 | 22 | 23 | 24 |
| | | | | | 25 |
| 26 | 27 | 28 | 29 | 30 | 31 |
| | | | | | |

| January 2012 | | | | | |
|--------------|--|-----|---|-----|-----|
| Mon | Tue | Wed | Thu | Fri | Sat |
| 2 | 3 | 4 | 5 Technical Subcommittee 1:00-4:00 p.m. CPUC Courtyard Room Participation: in- person, phone | 6 | 7 |
| | | | | | 8 |
| 9 | 10 Business Practices Subcommittee 1:00-4:00 p.m. CPUC Courtyard Room Participation: in- person, phone | 11 | 12 | 13 | 14 |
| | | | | | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 |
| | | | | | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 |
| | | | | | 29 |
| 30 | 31 | | | | |



Rule 21 Working Group Technical Subcommittee Meeting
Friday, August 19, 2011
1:00 p.m.-4:00 p.m.
CPUC Courtyard Room
505 Van Ness Ave.
San Francisco, CA 94102

Preparation:

1. Review this agenda
2. Review Rule 21 Working Group Procedures, with focus on Section 6.a (Phase 1 issues for Technical Subcommittee)

Meeting Intent: To affirm the Rule 21 issues that should be addressed by the Technical Subcommittee from September 2011 to January 2012

Meeting Roles:

Facilitator – Rachel Peterson, CPUC

Desired Outcomes

1. Understanding of regular meeting structure
2. Confirmation of Phase 1 issues for Technical Subcommittee to address
3. Identification of rough order of priority for Phase 1 issues

| Time | Title | Process | Lead |
|---------|---------------------------------|--|---|
| 1:00 PM | Introductions Housekeeping | Name, organization | All |
| 1:15 PM | Welcome | Overview of meeting intent, desired outcomes | Robert Strauss, Generation & Transmission Planning, CPUC |
| 1:30 PM | Review agenda | 1. Review agenda 2. Offer changes to make meeting flow more smoothly | Rachel Peterson, CPUC |
| 1:35 PM | Regular meeting structure | 1. Review regular components of Technical Subcommittee meetings 2. Offer changes to make meetings flow more smoothly Regular meeting components: A. Update from most recent Business Practices Subcommittee meeting and/or relevant CPUC proceeding | Rachel Peterson |

| | | | |
|----------------|--------------------|--|--------------------|
| | | <p>B. Create ongoing record within meeting minutes, including:</p> <ul style="list-style-type: none"> • Areas of consensus • Areas in need of further discussion • Additional data needs <p>C. Identify items for next meeting agenda</p> <p>D. Identify assignments:</p> <ul style="list-style-type: none"> • Preparer of meeting minutes, review process, posting deadline • Drafter(s) of next meeting agenda, review process, posting deadline • Upcoming meeting schedule | |
| 1:50 PM | Assignments Part 1 | Identify preparer of meeting minutes | |
| 1:55 PM | Updates | <p>1. [No Business Practices Subcommittee meeting to date]</p> <p>2. National Renewable Energy Laboratory (NREL) involvement in Rule 21 Working Group Technical Subcommittee</p> | Barry Mather, NREL |
| 2:00 PM | Phase 1 issues | 1. Evaluate, affirm Phase 1 issues for Rule 21 reform to be addressed by Technical Subcommittee (refer to Rule 21 Working Group Procedures, Section 6.a). | Rachel Peterson |
| 2:30 PM | Break | | All |
| 2:45 PM | Phase 1 issues | Continue discussion of Phase 1 issues | Rachel Peterson |
| 3:30 PM | Assignments Part 2 | <p>1. Identify items for next meeting agenda</p> <p>2. Meeting minutes: drafter, review process, posting deadline</p> <p>3. Next meeting agenda: drafter(s), review process, posting deadline</p> | All |
| 3:50 PM | Wrap-up | <p>1. Upcoming meetings:</p> <ul style="list-style-type: none"> • Business Practices Subcommittee, 8/23/2011, 1:00-4:00 PM, CPUC Courtyard Room or phone-in • Technical Subcommittee, 9/8/2011, 1:00-4:00 PM, CPUC Courtyard Room or phone-in <p>2. Final comments</p> | All |



Rule 21 Working Group Business Practices Subcommittee Meeting
Tuesday, August 23, 2011
1:00 p.m.-4:00 p.m.
CPUC Courtyard Room
505 Van Ness Ave.
San Francisco, CA 94102

Preparation:

1. Review this agenda
2. Review Rule 21 Working Group Procedures, with focus on Section 6.b (Phase 1 issues for Business Practices Subcommittee)

Meeting Intent: To affirm the Rule 21 issues that should be addressed by the Business Practices Subcommittee from September 2011 to January 2012

Meeting Roles:

Facilitator – Rachel Peterson, CPUC

Desired Outcomes:

1. Understanding of regular meeting structure
2. Confirmation of Phase 1 issues for Business Practices Subcommittee to address
3. Identification of rough order of priority

| Time | Title | Process | Lead |
|---------|---------------------------------|--|---|
| 1:00 PM | Introductions Housekeeping | Name, organization | All |
| 1:15 PM | Welcome | Overview of meeting intent, desired outcomes | Robert Strauss, Generation & Transmission Planning, CPUC |
| 1:30 PM | Review agenda | 1. Review agenda 2. Offer changes to make meeting flow more smoothly | Rachel Peterson |
| 1:35 PM | Regular meeting structure | 1. Review regular components of Business Practices Subcommittee meetings 2. Offer changes to make meetings flow more smoothly Regular meeting components: A. Update from most recent Technical Subcommittee meeting | Rachel Peterson |

| | | | |
|----------------|--------------------|---|-----------------|
| | | <p>B. Create ongoing record within meeting minutes, including:</p> <ul style="list-style-type: none"> • Areas of consensus • Areas in need of further discussion • Additional data needs <p>C. Identify items for next meeting agenda</p> <p>D. Identify assignments:</p> <ul style="list-style-type: none"> • Preparer of meeting minutes, review process, posting deadline • Drafter of next meeting agenda, review process, posting deadline • Upcoming meeting schedule | |
| 1:50 PM | Updates | Update from 8/19/2011 Technical Subcommittee meeting and/or relevant CPUC proceeding | |
| 2:10 PM | Assignments Part 1 | Identify preparer of meeting minutes | |
| 2:15 PM | Discussion | 1. Evaluate, affirm Phase 1 issues for Rule 21 reform to be addressed by Business Practices Subcommittee (refer to Rule 21 Working Group Procedures, Section 6.b) | Rachel Peterson |
| 2:45 PM | Break | | All |
| 3:00 PM | Discussion | 1. Continue discussion of Phase 1 issues | Rachel Peterson |
| 3:30 PM | Assignments Part 2 | <p>1. Identify items for next meeting agenda</p> <p>2. Meeting minutes: drafter, review process, posting deadline</p> <p>3. Next meeting agenda: drafter, review process, posting deadline</p> | All |
| 3:50 PM | Wrap-up | <p>1. Upcoming meetings:</p> <p>Technical Subcommittee, 9/8/2011, 1:00-4:00 PM, CPUC Courtyard Room or phone-in</p> <p>Business Practices Subcommittee, 9/13/2011, 1:00-4:00 PM, CPUC Courtyard Room or phone-in</p> <p>2. Final comments</p> | All |

ATTACHMENT 10



Rule 21 Working Group Workshop

August 19, 2011
California Public Utilities Commission



Rachel Peterson, Energy Division
rp1@cpuc.ca.gov





I. Overview

- Welcome, Housekeeping, Ground Rules
- Agenda Review
- Workshop Goals and Outcomes





Welcome, Housekeeping, Ground Rules

- Workshop is structured to stimulate an honest dialogue
 - Listen to other perspectives
 - Keep comments friendly and respectful
- Break as needed
- Lunch/end of morning session at 12:00
- Restrooms located across the hall
- Workshop has webcast participants listening
 - Participants in the auditorium must speak into microphones. Please state name and company before speaking.
- Slides online at <http://www.cpuc.ca.gov/PUC/energy/DistGen/rule21.htm>
- Participants on webcast can ask questions by emailing kf1@cpuc.ca.gov





Agenda for Today's Workshop

1. Overview
 - a) Welcome, Housekeeping, Ground Rules
 - b) Agenda Review
2. Introduction
 - a) Interconnection and California's Distributed Generation Goals
 - b) Using the CPUC Settlement Process
3. Workshop Goals and Outcomes
4. CPUC, IOU, and Marketplace Actions Affecting Interconnection
5. Discussion: Review, Revise, Affirm Rule 21 Working Group Procedures
6. Wrap-Up, Summary, and Next Steps





II. Introduction

Interconnection and California's Distributed Generation Goals

- **Robert Strauss, Supervisor, Generation and Transmission Planning Group, California Public Utilities Commission**

Using the CPUC Settlement Process

- **Frank Lindh, General Counsel, California Public Utilities Commission**





Workshop Goals and Outcomes

- 1. Goal: Communicate CPUC’s vision for Rule 21 reform to accommodate generators seeking interconnection to the distribution grid, and the formal and informal proceedings by which CPUC will develop the substance of such reform.**

Outcome 1: Understanding of CPUC’s vision for Rule 21 reform and the path to get there.

- 2. Goal: Discuss, modify, and affirm the proposed Rule 21 Working Group Procedures.**

Outcome 2: A modified and affirmed set of Rule 21 Working Group Procedures to launch reform efforts for Fall 2011.





III. CPUC, IOU, and Marketplace Actions Affecting Interconnection





Actions Affecting Interconnection cont.

- IOU Advice Letters proposing interim modification of Rule 21 for new PURPA QFs, AB 1613 CHP feed-in tariff participants, renewable feed-in tariff participants, and other procurement programs

Key interconnection issues:

Proposal for use of Wholesale Distribution Access Tariff (WDAT) on interim basis for generating facilities seeking interconnection at distribution level

Procedure:

June-Aug 2011: Advice Letters, protests, and replies filed

Next steps:

Under Commission review





Actions Affecting Interconnection cont.

- CPUC Proceeding (Rulemaking 11-05-005) to implement changes to Public Utility Code § 399.20 (Renewable Feed-in Tariff)

Key interconnection issues:

Expedited interconnection and resource adequacy mandates

Procedure:

June-Aug 2011: Ruling issued; Petition to Modify D.07-07-027 filed;
Proposed contracts filed by IOUs; reply comments

Next steps:

Proposed Decision anticipated by end of 2011





Actions Affecting Interconnection cont.

- AB 1613 Efficient Combined Heat-and-Power Feed-in Tariff Program

Key interconnection issues:

Resource adequacy mandate

Procedure and next steps:

Draft tariff and proposed standard contracts are under review by the Commission





Actions Affecting Interconnection cont.

- Qualifying Facilities (QF) Settlement:

Key interconnection issues:

Rule 21's original purpose was to interconnect QFs

Procedure and next steps:

Q3 2011: Anticipated Settlement Effectiveness Date, after which contracting opportunities begin

- IOUs developing standardized interconnection agreement for continuously exporting PURPA QFs with expiring contracts.

Key interconnection issues:

Fill Rule 21's lack of standardized IA for this group of generators

Procedure and next steps:

Q3 2011: Anticipated Advice Letter filing by IOUs





Actions Affecting Interconnection cont.

- Renewable Auction Mechanism (RAM):

Key interconnection issues:

Resource adequacy

Procedure:

8/18/2011: Commission approved RAM Resolution
establishing auction terms

Next steps:

Q4 2011: First RAM auction





Actions Affecting Interconnection *cont.*

- Commission Order Instituting Rulemaking (OIR) on Interconnection

Key interconnection issues:

Address technical and policy issues associated with interconnection

Procedure and next steps:

Q3 2011: Staff developing OIR proposal for Commission consideration

➔ *Update: Consensus-driven process and/or settlement agreements form the basis of revised interconnection rules.*





The Immediate Challenge

- Most urgent interconnection needs between September 2011 and early 2012: New and renewing QFs, AB 1613 CHP Feed-in Tariff participants, and Renewable Feed-in Tariff participants
- Some areas of the distribution grid have “capacity” already occupied or effectively reserved, because of:
 - Existing generators
 - Existing load
 - Queued generators
 - Design of existing equipment
 - Design and time frame of planned equipment upgrades
- California ISO Cluster 4 added 35 GW of renewable generation to the transmission-level queue
 - Total renewable generation now in queue = 68 GW
- CPUC procurement program rules apply different interconnection tariffs





Where Should I Engage?

IOU-Controlled Distribution Grid

- Customer-generator offsetting on-site load
- NEM and non-NEM

- New PURPA QFs ≤ 20 MW
- AB 1613 Efficient CHP Feed-in Tariff
- Renewable Feed-in Tariff (SCE, SDG&E)

*“Customer side
of the meter”*

*“System side
of the meter”*

Rule 21 Working Group/Settlement Discussions: Technical and business practices reforms
Interconnection OIR: Issue rulings on settlement-driven reforms





Where Should I Engage?

IOU-Controlled Distribution Grid

| | |
|---|--|
| <ul style="list-style-type: none"> • Customer-generator offsetting on-site load • NEM and non-NEM | <ul style="list-style-type: none"> • New PURPA QFs • AB 1613 Efficient CHP Feed-in Tariff • Renewable Feed-in Tariff (SCE, SDG&E) |
| <p style="text-align: center;"><i>“Customer side of the meter”</i> : <i>“System side of the meter”</i></p> | |
| <p style="text-align: center;">WDAT presently applies</p> | |

Rule 21 Working Group/Settlement Discussions:
 Technical and business practices reforms
 Interconnection OIR: Issue rulings on settlement-driven reforms





III. Discussion: Review, Revise, Affirm Rule 21 Working Group *Updated* Procedures





Problem Statement:

Rule 21 is failing to accommodate interconnection of generators to the distribution grid with the efficiency needed to achieve California's 33% Renewable Portfolio Standard (RPS) mandate, or Governor Brown's proposal for interconnecting 12,000 MW of distributed energy resources by 2020.





Problem Statement cont.: Rule 21's Engineering Baseline for Efficient Interconnection

Where generator is sized to primarily offset onsite load:

- 8 Initial Review screens
- 15% DG penetration limit

But where generator seeks to continuously export power:

- No screens in Supplemental Review to identify exporting generators requiring no / streamlined engineering study
- No defined study methodology in Independent Study Process
- No path to Resource Adequacy value

“Customer side of the meter”

“System side of the meter”





Problem Statement cont.: Rule 21's Administrative Baseline for Efficient Interconnection

Where generator is sized to primarily offset onsite load:

- Serial queue
- 30 business day limit
- \$800 app fee (\$0 for NEM)
- Standard

Interconnection Agmt

Results:

- 95,371 systems interconnected as of 8/3/2011

“Customer side of the meter”

But where generator seeks to continuously export power:

- No queue position or coordination method
- No cost allocation method among 2+ generators
- No Standard Interconnection Agreement

Results:

- ~220 active interconnection requests by exporting generators under Rule 21; some filed in 2008; 4 have achieved interconnection

“System side of the meter”





Problem Statement cont.

Engineering:

- **Lack of clear identification, from an engineering perspective, of generators that possess and do not possess transmission-level dependencies that are meaningful for interconnection**
- **Lack of clear engineering support for the amount of interconnected generating capacity possible given safety and reliability needs and requirements**
- **Lack of study methodology for interconnection of generators seeking to export part or all of their output to the host utility**





Problem Statement cont.

Lack of associated tariff provisions, including:

- 1. Realistic, reasonable, and transparent technical review and engineering study time frames**
- 2. Pathway to secure resource adequacy value**
- 3. Methods (e.g., security postings) to ensure that queued projects are viable**
- 4. Cost allocation methodology where two or more generators trigger distribution system upgrades**
- 5. Queue management system to ensure fair treatment**
- 6. Standard interconnection agreement for continuous export**





Proposed Goal

...Develop the technical and practical material that will form the substantive basis for Commission decisions reforming Rule 21 to provide for efficient, fair interconnection of generators to the distribution grid.





Proposed Purpose

...Serve as a forum to build consensus for Electric Rule 21 tariff (Rule 21) reforms to meet the technical needs and policy goals of interconnecting generating facilities to the utility distribution system.





Work Products

A series of written reports that document agreed-upon, consensus-driven “proposed rule changes” to Rule 21

Subject material for the proposed rule changes: See Protocol, Sec. 6.a and 6.b

Proposed rule changes are recommended to IOUs as the subject of Rule 21 modifications to be accomplished by appropriate CPUC procedure.

➔ *Update: Proposed rule changes form a series of settlement agreements or pieces of a larger settlement agreement reforming Rule 21, and are docketed in the Interconnection OIR.*





Participants/Parties

“...any representative of an entity who participates in discussing one or more of the proposed rule changes during one or more scheduled meetings.”

- Listen, ask questions
- Educate oneself about issues, interests
- Explore issues before forming conclusions
- Search for creative solutions

➔ *Update: Any stakeholder with an interest in interconnection may become a party to the settlement discussions. (See Rule 1.4, CPUC Rules of Practice and Procedure)*





Facilitator

CPUC Energy Division staff

Collaborates with parties to develop meeting agendas and write proposed rule changes

- Works to achieve consensus
- Facilitates participation by all parties
- Logistical and other support
- Policy guidance based on Commission decisions





Technical Assistance

- Fall 2011: National Renewable Energy Laboratory researchers and engineers
- Spring 2012: Potential additional technical resources





Guiding Principles for Rule 21

1. Rule 21 provides for simplified interconnection for self-generating facilities offsetting onsite load.
2. Rule 21 provides for efficient interconnection for all generators that export to the host utility, taking into account the generator's location on the grid, relationship to load, and relationship to other generators.
3. Rule 21 provides clear and transparent rules, protocols, and processes.
4. Rule 21 is generation technology-neutral.
5. Rule 21 is uniform statewide.
6. Rule 21 operating standards will ensure that grid safety and reliability is maintained or improved.





Fall 2011 Scope of Work

Two Subcommittees: Technical and Business Practices

Technical: Engineering reforms (e.g., DG penetration levels where no/streamlined study required, appropriate screens to add to Supplemental Review)

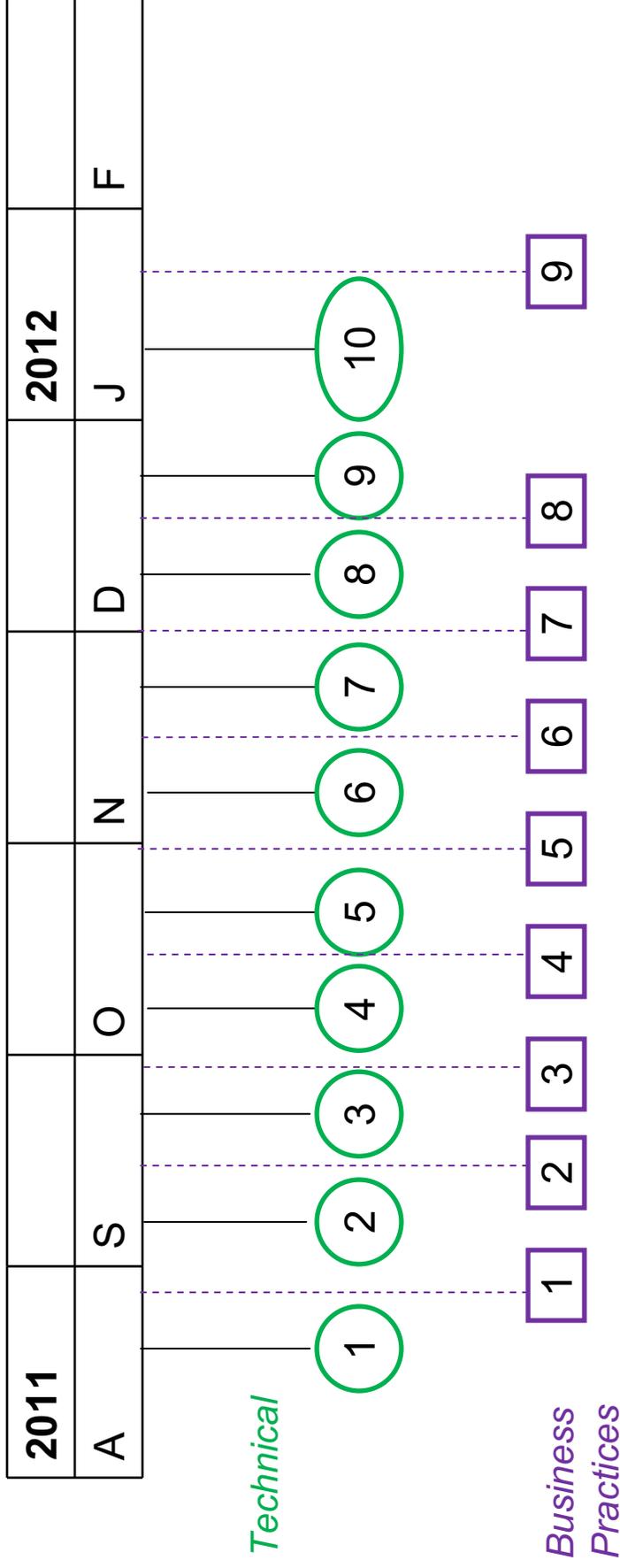
Business Practices: Tariff revisions to implement engineering reforms (e.g., obtaining and keeping queue position, realistic time frames)

Close review of Phase 1 issues in 8/19 afternoon session (Technical) and 8/23 afternoon session (Business Practices).





2011 Scope of Work cont.

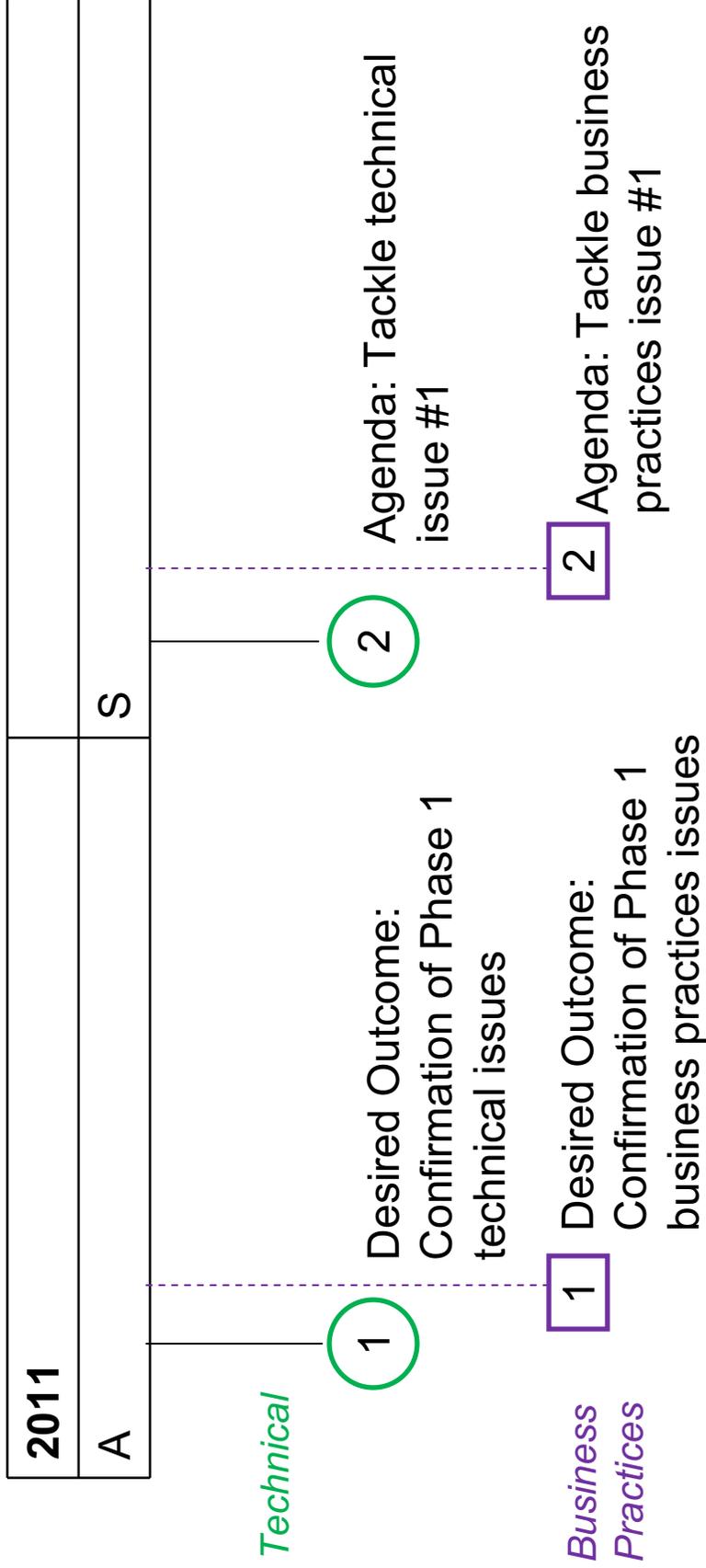


➔ *Update: Meeting schedule likely to become more intensive in settlement discussions; aim is a settlement containing a reformed Rule 21 by December 2011.*





2011 Scope of Work cont.





Meeting Participation

- In person, by phone, or by webcast as technology permits
- Agendas developed collaboratively, based on outcomes of prior meetings
- Bring in needed experts





Discussion Principles

- Describe the rationale for the proposed rule change
- Identify and understand respective points of view, interests and desired outcomes
- Obtain data necessary to understand the issues and make an informed decision
- Address all interests to the extent possible





Consensus-Building Process

- We are seeking consensus on all proposed rule changes
- Consensus means getting to a place where no participant cannot live with the proposed rule change
- Parties' responsibilities:
 - Arrive informed
 - Get management input beforehand
 - Work collaboratively





Communication, Information Management

Update:

- *CPUC will provide notice pursuant to rules re: becoming a party*
- *Settlement conferences are noticed to all parties, and participation is limited to parties only*
- *Parties must maintain strict confidentiality with respect to statements made during settlement discussions; statements not discoverable or admissible*
- *Commission ultimately approves settlement; must be reasonable in light of the record, consistent with law, and in the public interest*
- *(See Rule 12, CPUC Rules of Practice and Procedure)*





Tensions We May Face

- The perfect versus the good
- Arriving informed and being willing to listen to other perspectives
- Problem-solving approach versus being prepared to live with not finding the solution immediately





A Robust, Reformed Rule 21 Will...

IOU-Controlled Distribution Grid

Where generator is sized to primarily offset onsite load, maintain:

- Transparent, efficient, defined path to interconnection

Where generator seeks to continuously export power, implement:

- A transparent, efficient, defined path to interconnection

“Customer side of the meter”

“System side of the meter”





Workshop Outcome 1:

**Understanding of CPUC’s vision for Rule 21 reform
and the path to get there.**





Workshop Outcome 2:

A modified and affirmed set of Rule 21 Working Group Procedures to launch reform efforts for Fall 2011.





Wrap-up, Summary, Next Steps

- Deliverables:
 - Modified Procedures based on today's comments and summarized notes will be posted to <http://www.cpuc.ca.gov/PUC/energy/DistGen/rule21.htm>
 - *Notification of next procedural steps*
- Next Meetings:
 - Technical Subcommittee Meeting, 8/19/2011, 1-4 p.m., CPUC Courtyard Room
 - Business Practices Subcommittee Meeting, 8/23/2011, 1-4 p.m., CPUC Courtyard Room

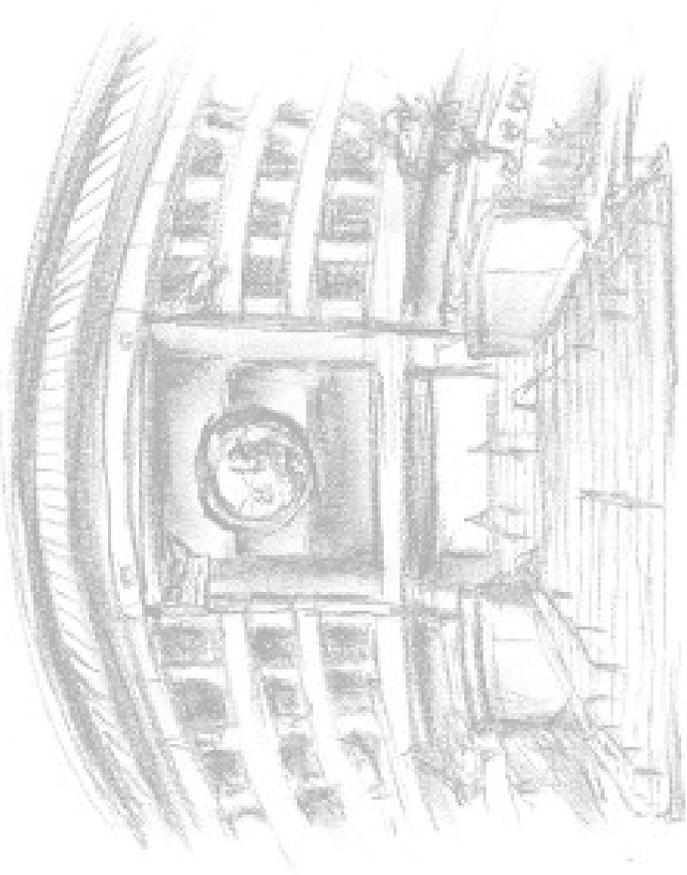




Thank you for participating!

Updates and information:

<http://www.cpuc.ca.gov/PUC/energy/DistGen/rule21.htm>



(END OF ATTACHMENT 10)



ATTACHMENT 11



Rule 21 Working Group Technical Subcommittee Meeting

August 19, 2011

California Public Utilities Commission Courtyard Room



Rachel Peterson, Energy Division
rp1@cpuc.ca.gov





Introductions, Housekeeping

- Please remember “participant” role (Listen, ask questions, educate oneself, explore issues before forming conclusions...)
- Break as needed; scheduled break at 2:30 p.m.
- Restrooms located across the courtyard through entrance to Auditorium
- Workshop has phone-in participants
 - Participants in the auditorium must speak into microphones. Please state name and company before speaking.
- Slides online at <http://www.cpuc.ca.gov/PUC/energy/DistGen/rule21.htm>





Welcome and Overview

Robert Strauss, Generation & Transmission Planning, CPUC





Agenda Review

Meeting intent:

- Affirm Rule 21 issues that should be addressed by the Technical Subcommittee

Meeting roles:

- Facilitator – Rachel Peterson, CPUC

Desired outcomes:

1. Understanding of regular meeting structure
2. Confirmation of Phase 1 issues
3. Identify rough order of priority

Suggestions for agenda modifications:

- Content
- Process to make the meeting flow more smoothly?





Regular meeting components:

- A. Update from most recent Business Practices Subcommittee meeting
- B. Create ongoing meeting notes, including:
 - Areas of consensus
 - Areas in need of further discussion
 - Additional data needs
- C. Identify items for next meeting agenda

 Update: Meeting notes will be confidential.





Regular meeting components cont.:

- D. Identify assignments:
- Preparer of meeting notes, process for review, posting deadline
 - Drafter of next meeting agenda, process for review, posting deadline
 - Upcoming meeting schedule

➔ *Update: For discussion: How progress should be memorialized yet kept confidential.*





Assignments, Part 1

Preparer of meeting notes for today...





Updates

[No Business Practices Subcommittee meeting to date]

National Renewable Energy Laboratory (NREL) and technical research assistance





Phase 1 Issues: Discuss, Modify, Affirm

(See Protocol, Sec. 6)

i. Determine the level at which the transmission system impact of the aggregate of the distribution-connected generators on a distribution circuit or segment can be considered negligible for purposes of interconnection, considering any of the following:

- 1) From an engineering standpoint, whether areas in the distribution system exist in which the interconnection of distribution-level generators will not have a significant transmission system impact;





Phase 1 Issues: Discuss, Modify, Affirm cont.

- 2) From an engineering standpoint, whether areas in the distribution system exist in which the interconnection of distribution-level generators may have a considerable impact on generators presently in the utility's Wholesale Distribution Access Tariff queue, but certain conditions exist that permit a reduced or streamlined engineering study for proposed generators;
- 3) From an engineering standpoint, whether areas in the distribution system exist that may have dependencies with generators presently in the utility's Wholesale Distribution Access Tariff queue, and certain conditions require full interconnection study.





Phase 1 Issues: Discuss, Modify, Affirm cont.

- ii. Identify the electrical characteristics of similar interconnection requests to categorize interconnection types and challenges, and develop standardized methods of treatment, including:
 - (1) Standardized technical criteria to identify groups of generators or areas of the distribution system;
 - (2) Standardized engineering study methodologies for similarly situated generators;
 - (3) Other?





Phase 1 Issues: Discuss, Modify, Affirm cont.

- iii. Develop an interconnection standard for safe and reliable interconnection of distributed generation to the distribution system that supports capacity penetration levels exceeding the current thresholds in Rule 21, including:
 - (1) Define the potential generating capacity of a distribution circuit or segment in terms of:
 - A relationship of the proposed generation's ampacity (peak capacity) rating to the peak load on the distribution circuit or segment;





Phase 1 Issues: Discuss, Modify, Affirm cont.

- A relationship of the proposed generation's ampacity rating to the minimum daytime load on the distribution circuit or segment (assuming the minimum daytime load is tracked);
- The rated ampacity of existing distribution equipment along with existing equipment ratings and programmable settings;
- The rated ampacity of existing distribution equipment with modified equipment ratings and programmable settings;





Phase 1 Issues: Discuss, Modify, Affirm cont.

- Planned upgrades to distribution equipment's peak ampacity;
- Planned major upgrades to distribution equipment's ampacity;
- Other?





Phase 1 Issues: Discuss, Modify, Affirm cont.

- [iii. Develop an interconnection standard for safe and reliable interconnection of distributed generation to the distribution system that supports capacity penetration levels exceeding the current thresholds in Rule 21, including:]
 - (2) Develop data from recent utility experience with interconnecting higher penetration levels;
 - (3) Develop screens for use in Rule 21 Supplemental Review process that identify reduced or streamlined interconnection studies necessary to complete interconnection;





Phase 1 Issues: Discuss, Modify, Affirm cont.

- (4) Develop data from recent research advances, case studies from other locations, and new and emerging technologies regarding interconnection higher penetration levels;
- (5) Identify operating standards, with particular focus on preventing unintentional islanding, to be applied where multiple inverters are located on the same distribution circuit or segment, including identification of certification process;
- (6) Develop technical criteria embodying new parallel operation standards that create a transparent path to interconnection to the distribution system;
- (7) Other?





Implementing Treatment Along Lines that Make Sense

IOU-Controlled Distribution Grid

| | | | |
|-------------------------------|--|---|--|
| Generator offsets onsite load | Generator exports but no / minimal interdependencies | Generator exports but inter-dependencies permit streamlined study | Export and interdependency requires detailed study |
|-------------------------------|--|---|--|

Rule 21 Supp.

Review

- Time frames
- App. cost
- Study / processing cost
- Cost allocation for upgrades
- Path to RA
- Queue position

Rule 21 ISP

Time frames

- App. cost
- Study / processing cost
- Cost allocation for upgrades
- Path to RA
- Queue position





Assignments Part 2

- Identify discussion items for next meeting agenda
- Meeting notes: Process for review, posting deadline
- Next meeting agenda: Drafter(s), process for review, posting deadline





Wrap-up

Upcoming meetings:

- Business Practices Subcommittee, 8/23/2011, 1:00-4:00 PM, CPUC Courtyard Room or phone-in
- Technical Subcommittee, 9/8/2011, 1:00-4:00 PM, CPUC Auditorium (note room change) or phone-in

Final comments

- What worked today? What didn't work?

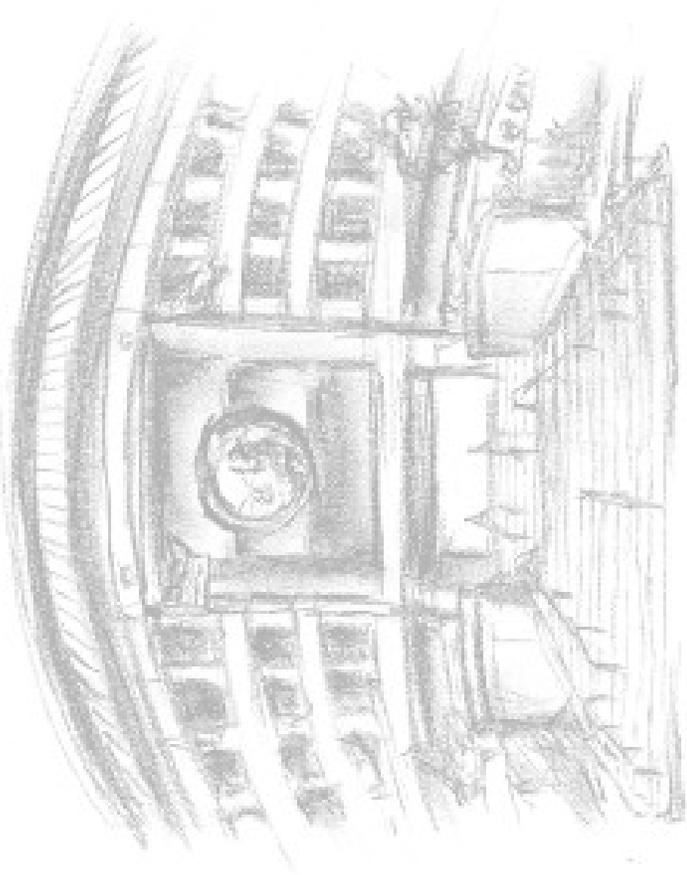




Thank you for participating!

Updates and information:

<http://www.cpuc.ca.gov/PUC/energy/DistGen/rule21.htm>



(END OF ATTACHMENT 11)



ATTACHMENT 12



Rule 21 Working Group Business Practices Subcommittee Meeting

August 23, 2011

California Public Utilities Commission Courtyard Room



Rachel Peterson, Energy Division
rp1@cpuc.ca.gov





Introductions, Housekeeping

- Please remember collaborative approach (Listen, ask questions, educate oneself, explore issues before forming conclusions...)
- Break as needed; scheduled break at 2:30 p.m.
- Restrooms located across the courtyard through entrance to Auditorium
- Workshop has phone-in participants
 - Participants in the room must speak into microphones. Please state name and company before speaking.
- Slides online at <http://www.cpuc.ca.gov/PUC/energy/DistGen/rule21.htm>





Welcome and Overview

Robert Strauss, Generation & Transmission Planning, CPUC





Agenda Review

Meeting intent:

- Affirm Rule 21 issues that should be addressed by the Business Practices Subcommittee

Meeting roles:

- Facilitator – Rachel Peterson, CPUC

Desired outcomes:

1. Understanding of regular meeting structure
2. Confirmation of Phase 1 issues
3. Identify rough order of priority

Suggestions for agenda modifications:

- Content
- Process to make the meeting flow more smoothly?





Regular meeting components:

- A. Update from most recent Technical Subcommittee meeting
- B. Create ongoing meeting notes, including:
 - Areas of consensus
 - Areas in need of further discussion
 - Additional data needs
- C. Identify items for next meeting agenda

 Update: Meeting notes will be confidential.





Regular meeting components cont.:

- D. Identify assignments:
- Preparer of meeting notes, process for review, posting deadline
 - Drafter of next meeting agenda, process for review, posting deadline
 - Upcoming meeting schedule

➔ *Update: For discussion: How progress should be memorialized yet kept confidential.*





Assignments, Part 1

Preparer of meeting notes for today: CPUC





Updates

1. Technical Subcommittee Meeting, 8/19/2011
2. National Renewable Energy Laboratory (NREL) and technical research assistance





Phase 1 Issues: Discuss, Modify, Affirm

(See Protocol, Sec. 6.b))

- i. Develop realistic, reasonable, and transparent time frames for application of technical criteria, completion of engineering studies, and other aspects of technical review of interconnection requests;
- ii. Develop methods to ensure that queued generators seeking interconnection to the distribution grid are viable projects;





Phase 1 Issues: Discuss, Modify, Affirm

(See Protocol, Sec. 6.b))

- iii. Develop a cost allocation methodology where two or more generators catalyze distribution system upgrades;
- iv. Develop a queue management system to ensure fair treatment;
- v. Develop a standard interconnection agreement for continuous export;





Phase 1 Issues: Discuss, Modify, Affirm

(See Protocol, Sec. 6.b))

- vi. Develop consistent methodology for calculating the generating capacity of existing generators interconnected to the distribution grid;
- vii. Other?





Implementing Treatment Along Lines that Make Sense

IOU-Controlled Distribution Grid

| | | | |
|--------------------------------------|---|--|---|
| <p>Generator offsets onsite load</p> | <p>Generator exports but no / minimal interdependencies</p> | <p>Generator exports but inter-dependencies permit streamlined study</p> | <p>Export and interdependency requires detailed study</p> |
|--------------------------------------|---|--|---|

Rule 21 Supp. Review

- *Time frames*
- *App. cost*
- *Study / processing cost*
- *Cost allocation for upgrades*
- *Path to RA*
- *Queue position*

Rule 21 ISP

- *Time frames*
- *App. cost*
- *Study / processing cost*
- *Cost allocation for upgrades*
- *Path to RA*
- *Queue position*





Assignments Part 2

- Identify discussion items for next meeting agenda
- Meeting notes: Process for review, posting deadline
- Next meeting agenda: Drafter(s), process for review, posting deadline





Wrap-up

Upcoming meetings:

- Technical Subcommittee, 9/8/2011, 1:00-4:00 PM, CPUC Auditorium (note room change) or phone-in
- Business Practices Subcommittee, 9/14/2011, 1:00-4:00 PM, CPUC Courtyard Room or phone-in

Final comments

- What worked today? What didn't work?

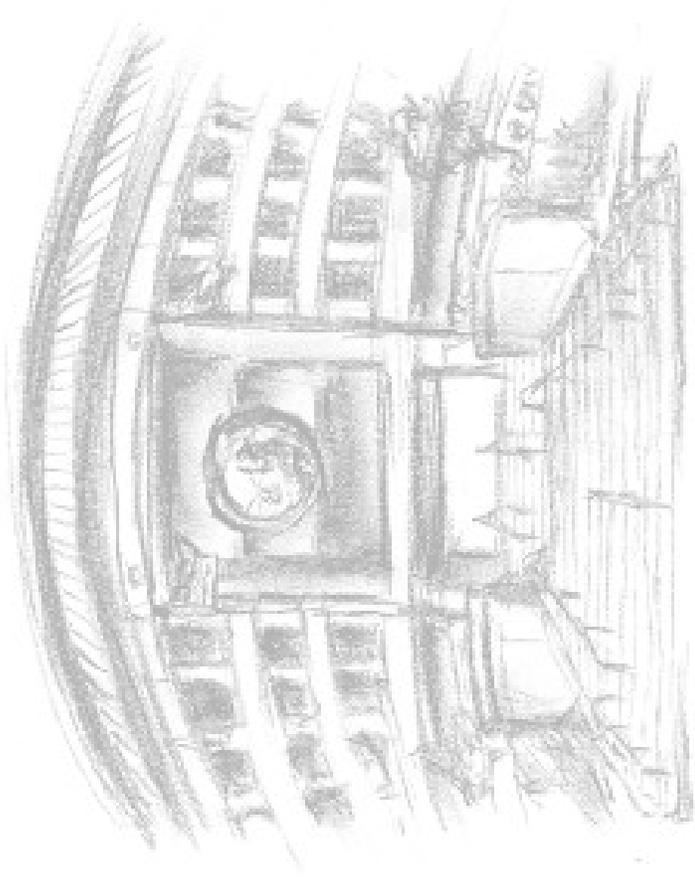




Thank you for participating!

Updates and information:

<http://www.cpuc.ca.gov/PUC/energy/DistGen/rule21.htm>



(END OF ATTACHMENT 1.2)

