Rule 21 Working Group Workshop

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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 tariff 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 <u>either</u> 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 <u>not</u> 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

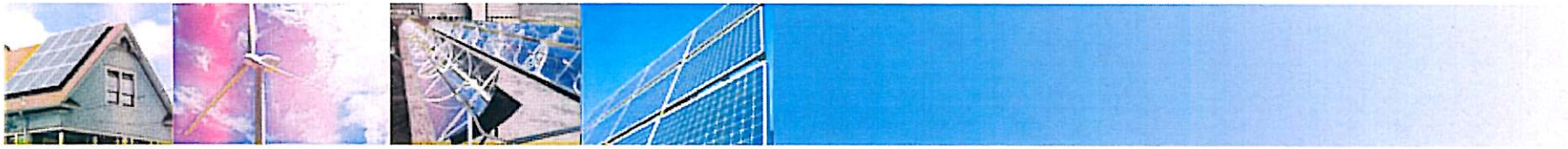
2. Sectors represented through 2008:
   - Utilities
   - DG developers
   - Equipment manufacturers
   - Consultants
   - Advocates
   - Industrial, Commercial, and Residential DG Users

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