

# PG&E

# Navigating the Rule 21

# Process



# Generation Interconnection Services

**Presenters:**

**Dylan Savidge, Josh Glidden, Mariana Sierra, Martha Baeli**

May 18, 2012



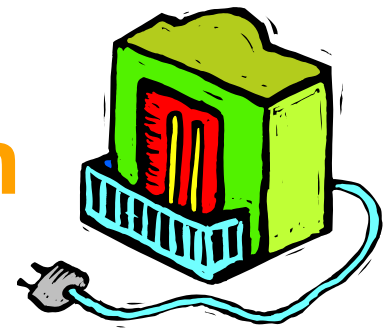


# Agenda

- **Introduction**
- **Rule 21 Process**
- **Application Walkthrough**
- **Q&A**
- **Resources**



# Generation Interconnection



- **Electric Rule 21 describes the process and requirements for safe and reliable interconnections of non-utility generators to PG&E's electrical system**
- **Consistent in form and content to the SDG&E's and SCE's Rule 21**



# Electric Rule 21 Overview

- **Describes the interconnection process**
- **Identifies customer's responsibilities**
- **Defines “parallel” generation**
- **Provides that a single point of contact at the utility will act as Project Manager**
- **Defines process steps – project review**
- **Defines “simplified” interconnection**
- **Establishes a consistent study fee and review process**
- **Outlines pre-certification and certification testing requirements**



# Applicability

**This Rule describes the Interconnection, operating and Metering requirements for Generating Facilities to be connected to Pacific Gas and Electric's (PG&E) Distribution System over which the California Public Utilities Commission (Commission) has jurisdiction. Subject to the requirements of this Rule, PG&E will allow the interconnection of Generating Facilities with its Distribution System.**



# General Rules, Rights and Obligations

- **Authorization Required to Operate**
- **Separate Agreements Required for Other Services**
- **Service Not Provided With Interconnection**
- **Compliance With Laws, Rules and Tariff Schedules**
- **Design Reviews and Inspections**
- **Right to Access**
- **Confidentiality of Information**
- **Prudent Operation and Maintenance Required**
- **Curtailment and Disconnection**



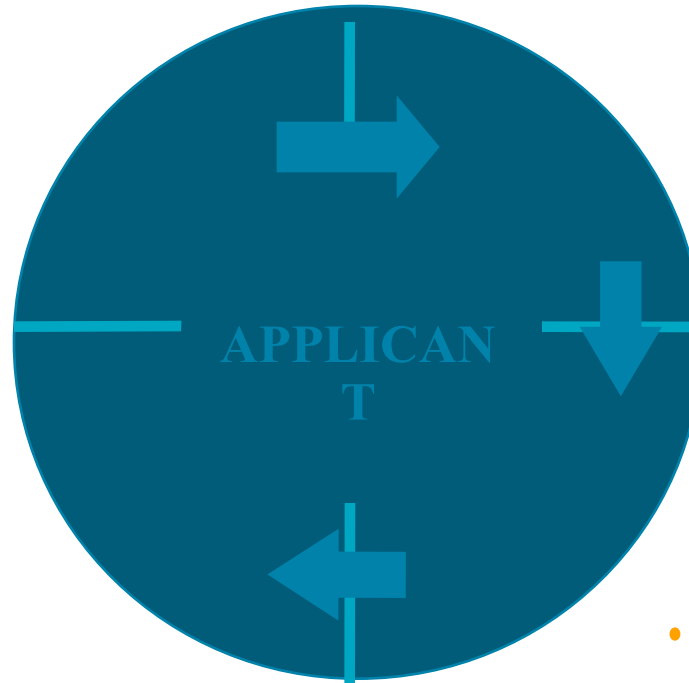
# Interconnection Process

## 1. APPLICATION

- Receive application
- Acknowledgement
- Preliminary review
- Receive missing info
  - Final review
  - Deem complete

## 4. CONSTRUCTION

- Interconnection work
  - Approve pertinent documents
    - Receive notice of Generator's readiness & relay test report
- Pre-parallel Inspection



## 2. ENGINEERING

- Initial review
- Supplemental Review
- Detailed interconnection study (DIS)

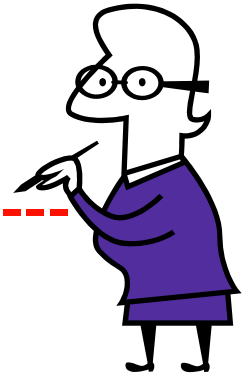
## 3. AGREEMENT

- Provide agreements
- Receive signed agreements
- Process agreements/payment





# Application and Interconnection Process



## APPLICATION PROCESS

- **Applicant Initiates Contact With PG&E**
- **Applicant Completes an Application**
- **PG&E Performs an Initial and Supplemental Review and Develops Preliminary Cost Estimates and Interconnection Requirements**
- **When Required, Applicant and PG&E Commit to Additional Interconnection Study Steps.**

.



# Application Processing

Start at our website:

**Distributed Generation (Rule 21 Retail Generators)**

<http://www.pge.com/mybusiness/customerservice/nonpgeutility/generateowpower/distributedgeneration/generationrule21/index.shtml>

The screenshot shows the PG&E website interface. At the top, there is a navigation bar with the PG&E logo, a search box, and links for 'For My Business', 'About PG&E', 'Media Newsroom', 'Careers', 'Contact Us', 'Español', and '中文'. Below the navigation bar is a main menu with categories: 'Manage My Account', 'Customer Service' (highlighted in orange), 'Save Energy & Money', 'Environment', and 'Education & Safety'. The 'Customer Service' section is expanded to show a list of services: 'Emergency', 'Contact PG&E', 'Service Guarantees', 'Start Stop & Move Service', 'More Services', 'Brochures & Forms', 'SmartMeter™', 'Outages', 'Energy Choice', 'Non-PG&E Utility Services' (expanded to show 'Departing Load', 'Electric Transmission Service', and 'Generate Your Own Power'). The main content area is titled 'Distributed Generation (Rule 21 Retail Generators)' and contains a paragraph explaining that Distributed Generation (DG) applies to customers who install generators to reduce power purchase. It also mentions that DG generators may be powered by solar, wind, hydro, fuel cell, or natural gas. To the right of the main text is an 'Additional Info' section with a list of links: 'Rates and Rules', 'Departing Load', 'Self-Generation Incentive Program', 'Distribution Interconnection Handbook', 'Transmission Interconnection Handbook', 'PG&Es Greenbook', 'California Solar Initiative (CSI)', 'PG&E Technical White Paper', 'Electric Rule 21', 'Rule 21 Interconnection Application (Form 79-974) Mar 2008', 'Rule 21 Application Checklist', 'Sample Single Line Drawing', and 'DG5-1 Form'. At the top right of the main content area, there are links for 'Print Page' and 'Email Page'.



# Application Processing

Which application to complete? <http://www.pge.com/tariffs>

Program	Technology	Size Limit	Application Forms
Standard NEM	Solar, Wind or Hybrid	≤ 30kw	Application Form 79-1101
Expanded NEM	Solar, Wind or Hybrid	30 kw up to 1MW	Application Form 79-974 Supplemental Form 79-998
NEMVNMA	Solar	< 1MW	Application Form 79-1124 Appendix A & B Application Form 79-1109 & Appendix A
NEMFC	Fuel Cell	< 1MW	Application Form 79-974
NEMMT	Multiple Technologies	unlimited	Application Form 79-974
Non-Export	Fuel Cell, Solar, Wind, emergency generators, and other	Unlimited	Application Form 79-974



# Application Processing

## Greenfield Project? (New service & new generation)

**A New interconnection in conjunction with a new service**

**An Application for Service must be completed. Additional fees may be required if a service or line extension is required (in accordance with PG&E Electric Rules 15 and 16). Please contact PG&E at 1-800-PGE-5000.**

## Existing Generation?

**List it ALL generation in Application Form 79-974.**

**Include existing and new generation in SLD.**

**In search of existing generation? For PG&E to share customer information, complete: Form 79-1095, Authorization to Receive Customer Information or Act Upon a Customer's Behalf**



# Application Processing

**WE DO NOT REQUIRE Four (4) copies of Application, only one hard copy - Electronic submittals are preferred ([gen@pge.com](mailto:gen@pge.com))**

- 1. A Single-line drawing (SLD). Include Manufacturer & Model Number of A/C disconnect on the SLD**
- 2. Site plans and diagrams, electric output meter(s) and the A/C disconnect switch. Provide Specs of Net Generation Output Meter (NGOM) panel (if required).**
- 3. If transformers are used provide transformer nameplate information (voltages, capacity, winding arrangements, connections, impedance, etc.)**
- 4. If a transfer switch or scheme is used to interconnect the Generating Facility with PG&E Distribution System, provide component descriptions, capacity ratings, and a technical description of how the transfer scheme is intended to operate**
- 5. If protective relays are used to control the interconnection, provide protection diagrams or elementary drawings showing relay wiring and connections, proposed relay settings, and a description of how the protection scheme is intended to function**
- 6. Application study fee may be required**



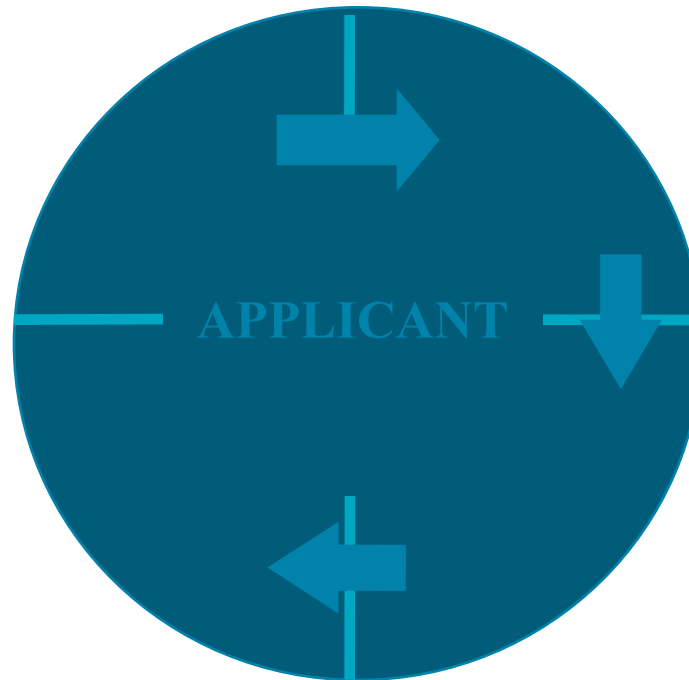
# Interconnection Process

## 1. APPLICATION

- Receive application
- Acknowledgement
- Preliminary review
- Receive missing info
- Final review
- Deem complete

## 4. CONSTRUCTION

- Interconnection work
- Approve pertinent documents
- Receive notice of Generator's readiness & relay test report
- Pre-parallel Inspection



## 2. ENGINEERING

- Initial review
- Supplemental Review
- Detailed interconnection study (DIS)

## 3. AGREEMENT

- Provide agreements
- Receive signed agreements
- Process agreements/payment



# Review Process

- **Application Review:** reviewed for completeness within 10 business days of receipt.
- **Initial Review:** within 10 business days of deeming the application complete.
- **Supplemental Review:** The review, if required, should be completed within 20 business days of deeming the application complete.
- **Detailed Interconnection Study:** The applicant must enter into an agreement with Pacific Gas and Electric Company to perform such additional studies, facility design/engineering and to provide detailed cost estimates for fixed price or actual cost billing should interconnection upgrades be required. The study may be at the applicant's expense.



Source of Presentation  
Name of Presentation





# Agreements

Program	Technology	Size Limit	Agreements
Standard NEM	Solar, Wind or Hybrid	≤ 30kw	Application Form 79-1101
Expanded NEM	Solar, Wind or Hybrid	30 kw up to 1MW	Interconnection Agreement Form 79-978
NEMVNMA	Solar	< 1MW	
NEMFC	Fuel Cell	< 1MW	Interconnection Agreement Form 79-1010 79-973
NEMMT	Multiple Technologies	unlimited	
Non-Export	Fuel Cell, Solar, Wind, emergency generators, and other	Unlimited	Interconnection Agreement Form 79-973



# Facility Completion Metering, Monitoring and Telemetry

1. General Requirements
2. Metering by Non-PG&E parties
3. Net Generation Output Metering (NGOM)
4. Point of Common Coupling (PCC) Metering
5. Telemetry
6. Location
7. Costs of Metering
8. Multiple Tariff Metering





# Pre-Parallel Inspection (PPI)

## Certified Equipment

Customer to provide FINAL Building Permit

PG&E to schedule inspection

## Uncertified Equipment

Customer to provide in addition to above:

All items in Pre-Parallel Checklist

Basic Information Sheet

Battery Test Reports

Once Inspection is a **PASS** PG&E Issues PTO Letter



# Key Messages

Apply early!

Completed application:

- Single line – new and existing generation (if applicable)
- Main disconnect detail
- All fields completed
- If existing generation, must be included in application

Electronic applications preferred – [gen@pge.com](mailto:gen@pge.com)

Application fees – do not send us a check.

“Customer Release Form”

Communicate, communicate, communicate

CSI application does not initiate interconnection process



# Other Topics

**SB 489**

**NEMV**

**New Rule 21 (DG OIR)**



# Who to contact/resources

**CSI**

**Tariffs**

**GIS**

- [Gen@pge.com](mailto:Gen@pge.com)
- 1-800-weconnectyou

[www.pge.com/gen](http://www.pge.com/gen)



# Resources

## **NEM Webpage**

<http://www.pge.com/b2b/newgenerator/netenergymetering/index.shtml>

## **NEM Schedule**

[http://www.pge.com/tariffs/tm2/pdf/ELEC\\_SCHEDS\\_NEM.pdf](http://www.pge.com/tariffs/tm2/pdf/ELEC_SCHEDS_NEM.pdf)

## **Distributed Generation Webpage**

<http://www.pge.com/b2b/newgenerator/distributedgeneration/generationrule21/index.shtml>

**Contact [gen@pge.com](mailto:gen@pge.com) for interconnection related questions**

# Thank You

**Presenter**  
email@pge.com

