

PUBLIC UTILITIES COMMISSION
505 Van Ness Avenue
San Francisco CA 94102-3298



Pacific Gas & Electric Company
ELC (Corp ID 39)
Status of Advice Letter 5877E
As of August 31, 2020

Subject: Informational Filing of Inclusion of Pre-Approved Template Single-Line Diagrams for PG&E's Rule 21

Division Assigned: Energy

Date Filed: 07-16-2020

Date to Calendar: 07-20-2020

Authorizing Documents: D2006017

Disposition:	Accepted
Effective Date:	07-16-2020

Resolution Required: No

Resolution Number: None

Commission Meeting Date: None

CPUC Contact Information:

edtariffunit@cpuc.ca.gov

AL Certificate Contact Information:

Kimberly Loo

(415)973-4587

PGETariffs@pge.com

PUBLIC UTILITIES COMMISSION
505 Van Ness Avenue
San Francisco CA 94102-3298



To: Energy Company Filing Advice Letter

From: Energy Division PAL Coordinator

Subject: Your Advice Letter Filing

The Energy Division of the California Public Utilities Commission has processed your recent Advice Letter (AL) filing and is returning an AL status certificate for your records.

The AL status certificate indicates:

- Advice Letter Number
- Name of Filer
- CPUC Corporate ID number of Filer
- Subject of Filing
- Date Filed
- Disposition of Filing (Accepted, Rejected, Withdrawn, etc.)
- Effective Date of Filing
- Other Miscellaneous Information (e.g., Resolution, if applicable, etc.)

The Energy Division has made no changes to your copy of the Advice Letter Filing; please review your Advice Letter Filing with the information contained in the AL status certificate, and update your Advice Letter and tariff records accordingly.

All inquiries to the California Public Utilities Commission on the status of your Advice Letter Filing will be answered by Energy Division staff based on the information contained in the Energy Division's PAL database from which the AL status certificate is generated. If you have any questions on this matter please contact the:

Energy Division's Tariff Unit by e-mail to
edtariffunit@cpuc.ca.gov

July 16, 2020

Advice 5877-E

(Pacific Gas and Electric Company ID U 39 E)

Public Utilities Commission of the State of California

Subject: Informational Filing of Inclusion of Pre-Approved Template Single-Line Diagrams for PG&E's Rule 21 Interconnection Application Process Pursuant to Decision 20-06-017

Purpose

Pacific Gas and Electric Company ("PG&E") hereby submits this Tier 1 Advice Letter ("AL") in compliance with California Public Utilities Commission ("CPUC" or "Commission") Decision ("D.") 20-06-017 ("Decision") Ordering Paragraph ("OP") 1 in order to inform the Commission of inclusion of pre-approved template single-line diagrams ("SLDs") for PG&E's Rule 21 interconnection application process.

Background

The Commission initiated Rulemaking ("R.") 19-09-009 to develop a policy framework surrounding the commercialization of microgrids and related resiliency strategies and to implement Senate Bill (SB) 1339 (Stern, 2018).

On December 20, 2019 the assigned Commissioner's Scoping Memo and Ruling was issued, adopting a scope and schedule for Track 1 of the proceeding. Track 1 addressed deploying resiliency planning in areas that are prone to outage events and wildfires, with the goal of establishing key microgrid and resiliency strategies as soon as possible. Subsequently, on January 21, 2020, Administrative Law Judge Rizzo issued a Ruling with Energy Division staff's ("Staff's") proposal on short-term actions related to microgrids and other resiliency strategies that could be initiated in early 2020 to reduce the impact of public safety power shutoff ("PSPS") outages or other catastrophic events.

On June 11, 2020, the Commission adopted D.20-06-017, which approves certain Staff proposals for prioritizing and streamlining interconnection applications to deliver resiliency services at key sites and locations. This Advice Letter addresses the requirements included in Ordering Paragraph 1 of D.20-06-017, which requires:

*Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), and San Diego Gas & Electric Company (SDG&E) shall each submit **Tier 1 Advice Letters** within **30 days of the date of issuance of this decision**, that informs the Commission of inclusion of **pre-approved template single-line diagrams** for the interconnection application process.*

*Each utility shall demonstrate in its advice letter that the pre-approved template single line diagrams were designed **in compliance with Section 4.1.3** of this decision and shall report:*

- (a) both that the utility informally consulted with stakeholders and vetted the diagrams through technical meetings and the degree to which attendees at the technical meetings reached consensus;*
- (b) must provide a list of who attended the meetings; and*
- (c) technical details specific to the single line diagrams, including the types of permitted devices (or information on the preapproved equipment list), the processes for assessing the devices, and the device certification requirements.*

If any proposals were rejected, the utility shall:

- (a) explain the reasoning for the rejection;*
- (b) provide updates to interconnection agreement terms as well as any other Commission-approved forms in order to implement the requirements adopted, here;*
- (c) provides information on of the single line diagrams; and*
- (d) discuss any updates required to the interconnection portals, along with a timeline for when the updates will take place.*

In this Advice Letter submittal, PG&E, SCE, and SDG&E shall reference compliance with this decision pursuant to Ordering Paragraph 1. [emphasis added; reformatted to highlight key requirements]

PG&E submits this Tier 1 Advice Letter in compliance with Ordering Paragraph 1 of D.20-06-017.

Discussion

In compliance with OP 1 and Section 4.1.3 of D.20-06-017, PG&E provides below detailed information on the pre-approved template SLDs and steps taken to consult informally and formally with stakeholders to develop acceptable template designs.

A. Informal Consultation and Technical Meetings

In preparing these SLD use cases, PG&E consulted with industry stakeholders to develop such pre-approved template single line diagrams in order to get a basic set of designs (as described in Section 3 below) in use as quickly as possible. The following informal and formal consultations were undertaken:

1. Technical Meetings (Smart Inverter Working Group) sponsored by the Commission's Energy Division where the utilities and stakeholders formally engaged with each other on the following dates in order to collaborate and develop consistent, single line diagrams across the IOUs systems to ensure transparency, continuity, and simplicity:
 - a. June 18, 2020, Smart Inverter Working Group ("SIWG") meeting. (SLDs were the main topic); and
 - b. June 25, 2020, SIWG (pre-PSPS charging as required by Decision 20-06-017 OP 5 was the main topic; but PG&E introduced a fifth SLD to align with industry stakeholder interests)
2. The process of developing PG&E's current SLD set occurred over a much broader timespan. PG&E published its first standard SLD in 2013 for is standard NEM¹ programs², which by volume constitute the most common interconnect type. In late 2019 and early 2020, PG&E expanded the use of SLDs through its CRESP³ (Customer Resiliency Support Program), which focuses on expediting standard NEM sized projects that meet certain conditions. PG&E vetted its proposal, including the SLDs, at numerous distributed energy resources (DER) developer webinars in March 2020. The webinars were attended by the other investor-owned utilities ("IOUs") (see 3 below), with the Energy Division staff (see 4.a below), and with numerous other stakeholders (see 4.b – e below).⁴
3. IOU Collaboration⁵
 - a. March 4, 2020
 - b. March 24, 2020
 - c. March 26, 2020
 - d. June 16, 2020

¹ Standard NEM or SNEM is for solar and/or wind sized no larger than 30 kW. It was used for most residential applications.

² The SLD was included in PG&E Form 79-1151B submitted with PG&E AL 4263-E for Rate Schedule NEM, effective December 1, 2016, and later in PG&E Form 79-1151B-02 submitted in PG&E AL 4802-E, -A, -B, -C, for Rate Schedule NEM2, which became effective upon hitting the NEM cap in December 16 2016 (see PG&E AL 4980-E).

³ See PG&E AL 5791-E which discusses PG&E's CRESP changes to PG&E's Rule 21 tariff.

⁴ While CALSSA, SolarEdge and Tesla met with PG&E on the specific dates noted in 4, c, d and e, they were also invited and included at the other public presentations noted in 4.b.

⁵ This is not an exhaustive listing. There were numerous emails and phone conversations.

4. Webinars where template Single Line Diagrams for Battery storage were shared:
 - a. Energy Division staff
 - i) March 13, 2020
 - b. Public Presentations for DER Developers
 - i) March 17, 2020
 - ii) March 18, 2020
 - iii) March 23, 2020
 - iv) March 26, 2020
 - c. SolarEdge
 - i) May 13, 2020,
 - ii) May 20, 2020
 - d. Tesla
 - i) March 24, 2020
 - ii) May 19, 2020 (reviewed 8 SLD samples provided by Tesla)
 - iii) July 2, 2020 (general meeting to discuss template SLDs)
 - e. CALSSA
 - i) June 26 (Discussed > 30 kW SLDs)⁶

B. Meeting Attendees and Information on Degree of Consensus At Technical Meetings

The June 18, 2020, and June 25, 2020 SIWG meetings were sponsored and attended by Energy Division staff. More than a hundred participants attended both meetings.

Attendees represented a broad swath of stakeholders including:⁷

- generator system developers;
- installers;
- equipment suppliers;
- manufacturers;
- the other IOUs; and

⁶ CALSSA and PG&E agreed > 30 kW generating system SLDs were out of scope for this advice, but agreed to entertain further discussions on this topic in the future.

⁷ Not all SIWG participants listed their company associations, however the following parties attended one or more of the listed SIWG meetings: (1) Southern California Edison Company, (2) San Diego Gas & Electric Company, (3) PG&E, (4) CPUC Energy Division, (5) CPUC Public Advocates Office, (6) California Energy Commission (CEC), (7) California Solar and Storage Alliance (CalSSA), (8) California Energy Storage Alliance (CESA), (9) Clean Coalition, (10) Enphase Energy, (11) Electric Power Research Institute (EPRI), (12) GE Renewables, (13) Hawaiian Electric Company (HECO), (14) Intertek, (15) Interstate Renewable Energy Council (IREC), (16) Kitu Systems, (17) Morningstar Corp., (18) Microgrid Resource Coalition, (19) MPR Associates, (20) OpenEgrid, (21) PacifiCorp, (22) QualityLogic, (23) Smart Electric Power Alliance (SEPA), (24) SMA America Inc., (25) Sacramento Municipal Utility District (SMUD), (26) Sunrun, (27) SunSpec Alliance, (28) Stem, Inc., (29) SolarEdge, (30) Tesla, and (31) Wivity Inc.

- other interested parties

In both SIWG meetings, PG&E generally received positive feedback from meeting participants and did not reject any participant proposals.

At the June 18, 2020 SIWG, PG&E was asked why it did not have an AC-coupled SLD. In response, PG&E prepared an SLD for this case, and presented it at the June 26, 2020 SIWG meeting. (See Section E below.)

As to the degree of consensus, PG&E was aligned with the other IOUs on the SLDs included (once it added the AC-coupled scenario).

C. Technical Details Specific To The Single Line Diagrams

As a result of the stakeholder meetings, PG&E developed the following SLD types:

Use case #	SLD Types ⁸	Description
1	Rule 21 SNEM	SNEM with inverter nameplate rating less than or equal to 30 kVA/kW
2	Rule 21 SNEM Paired Storage (DC coupled)	DC coupled SNEM Paired Storage Systems with inverter nameplate rating less than or equal to 30 kVA/kW and Storage less than or equal to 10 kVA/kW
3	Rule 21 Non-Export – Protection Option 3	Storage Systems with inverter nameplate rating less than or equal to 10 kVA/kW
4	Rule 21 Non-Export – Protection Option 6	Storage Systems with inverter nameplate rating less than or equal to 10 kVA/kW
5	Rule 21 SNEM Paired Storage (AC coupled)	AC coupled SNEM Paired Storage Systems with PV inverter nameplate rating less than or equal to 30 kVA/kW and Storage inverter less than or equal to 10 kVA/kW ⁹

The processes for assessing the devices, and the device certification requirements are generally as follows:

- Equipment such as inverters and photovoltaic panels must be on the California Energy Commission's (CEC's) validated equipment list.

⁸ No other generator must be present.

⁹ The SLD for Rule 21 SNEM Paired Storage (AC coupled) was provided to Energy Division staff after the June 18, 2020 SIWG meeting.

- AC Disconnect Switches must be approved types listed in PG&E's Greenbook. See Greenbook Table 5-4 for AC Disconnect Requirements: www.pge.com/greenbook

The current SLDs developed by PG&E can be viewed at:
https://www.pge.com/en_US/for-our-business-partners/interconnection-renewables/interconnections-renewables.page?ctx=business

D. Issues Raised By Stakeholders

1. On June 26, 2020, P&GE met with CalSSA to discuss developing a SLD for projects >30kW. PG&E and CalSSA agreed such an SLD was outside the scope of D.20-06-017, but PG&E could consider development of such "fill in the blank" template SLDs for this size range at a future time.
2. On July 1, PG&E received a question if we can develop templates specific for each battery, i.e. Tesla, LG Chem, etc. instead of generic templates?

PG&E informed that inquirer that the template SLDs are created to cover the two different ways of connecting a storage system, DC or AC coupled systems. They do not list specific equipment manufacturers, and instead allow any new manufacturer product offerings used by applicants to use the applicable template SLDs. Applicants are not required to use the templates and have the option to submit a custom SLD. PG&E will take into consideration the feedback to make the template SLDs specific for manufacturers.

3. On July 1, PG&E received a question about how the template SLDs apply to retrofit projects, where a customer is installing additional photovoltaic systems and/or battery to an existing approved system?

PG&E informed the inquirer that the current template SLDs are applicable only for completely new installations and not applicable for retrofit systems. Retrofit projects require a custom SLD to be provided to identify the existing and new proposed generation. PG&E will review the feedback received about making the template SLDs available for retrofit projects if the template SLDs accurately represent the final system (existing and new generation).

Many additional questions were submitted at PG&E's July 1, 2020, meeting, but they were mostly concerning clarification or explanations of the process.

4. At the July 2, 2020, meeting with Tesla. PG&E was asked to add a drawing representing a device such as the Tesla Gateway in between the

AC Disconnect and electric panel for applicants to acknowledge the presence of the Tesla Gateway. If it is applicable, the applicant will check a box to indicate that the Gateway is utilized for the project.

PG&E noted that while it is open to reviewing a revised SLD to include an optional device such as the Tesla Gateway, PG&E will need to have a follow-up meeting to review the proposal. While this proposal was not rejected, it is not included in the template SLDs at this time.

E. Updates to Interconnection Agreement Terms

At this time, PG&E does not plan to incorporate SLDS into their interconnection agreement terms as a part of this advice letter. These SLDs are expected to evolve as applicants, the industry, and IOUs gain experience with them.

F. Information on the Single Line Diagrams and Updates to Interconnection Portal

Currently on PG&E's application portals, SLDs can be uploaded with an application. Applicants can manually select one of the standard SLDs to upload. In the future, SLDs will be selected by the applicant on a menu, and once selected, automatically uploaded on PG&E's ACE-IT Portal. The application portal logic/automation for implementing these changes will be in place in the next 30-60 days.

Protests

*****Due to the COVID-19 pandemic and the shelter at home orders, PG&E is currently unable to receive protests or comments to this advice letter via U.S. mail or fax. Please submit protests or comments to this advice letter to EDTariffUnit@cpuc.ca.gov and PGETariffs@pge.com*****

Any party wishing to protest this submittal may do so by letter sent via U.S. mail, facsimile or E-mail, no later than August 5, 2020, which is 20 days after the date of this submittal. Protests must be submitted to:

CPUC Energy Division
ED Tariff Unit
505 Van Ness Avenue, 4th Floor
San Francisco, California 94102

Facsimile: (415) 703-2200
E-mail: EDTariffUnit@cpuc.ca.gov

Copies of protests also should be mailed to the attention of the Director, Energy Division, Room 4004, at the address shown above.

The protest shall also be sent to PG&E either via E-mail or U.S. mail (and by facsimile, if possible) at the address shown below on the same date it is mailed or delivered to the Commission:

Erik Jacobson
Director, Regulatory Relations
c/o Megan Lawson
Pacific Gas and Electric Company
77 Beale Street, Mail Code B13U
P.O. Box 770000
San Francisco, California 94177

Facsimile: (415) 973-3582
E-mail: PGETariffs@pge.com

Any person (including individuals, groups, or organizations) may protest or respond to an advice letter (General Order 96-B, Section 7.4). The protest shall contain the following information: specification of the advice letter protested; grounds for the protest; supporting factual information or legal argument; name, telephone number, postal address, and (where appropriate) e-mail address of the protestant; and statement that the protest was sent to the utility no later than the day on which the protest was submitted to the reviewing Industry Division (General Order 96-B, Section 3.11).

Effective Date

Pursuant to General Order (GO) 96-B, Rule 5.1, this advice letter is submitted with a Tier 1 designation. PG&E requests that this Tier 1 advice submittal become effective upon date of submittal, which is July 16, 2020.

Notice

In accordance with General Order 96-B, Section IV, a copy of this advice letter is being sent electronically and via U.S. mail to parties shown on the attached list and the parties on the service list for R.17-07-007, R.14-07-002 and R.19-09-009. Address changes to the General Order 96-B service list should be directed to PG&E at email address PGETariffs@pge.com. For changes to any other service list, please contact the Commission's Process Office at (415) 703-2021 or at Process_Office@cpuc.ca.gov. Send all electronic approvals to PGETariffs@pge.com. Advice letter submittals can also be accessed electronically at: <http://www.pge.com/tariffs/>.

/S/

Erik Jacobson
Director, Regulatory Relations

cc: Service List R.17-07-007
Service List R.14-07-002
Service List R.19-09-009



ADVICE LETTER SUMMARY

ENERGY UTILITY



MUST BE COMPLETED BY UTILITY (Attach additional pages as needed)

Company name/CPUC Utility No.: Pacific Gas and Electric Company (ID U39E)

Utility type:

☒ ELC ☐ GAS ☐ WATER
☐ PLC ☐ HEAT

Contact Person: Kimberly Loo

Phone #: (415)973-4587

E-mail: PGETariffs@pge.com

E-mail Disposition Notice to: KELM@pge.com

EXPLANATION OF UTILITY TYPE

ELC = Electric GAS = Gas WATER = Water
PLC = Pipeline HEAT = Heat

(Date Submitted / Received Stamp by CPUC)

Advice Letter (AL) #: 5877-E

Tier Designation: 1

Subject of AL: Informational Filing of Inclusion of Pre-Approved Template Single-Line Diagrams for PG&E's Rule 21 Interconnection Application Process Pursuant to Decision 20-06-017

Keywords (choose from CPUC listing): Compliance, Rule 21

AL Type: ☐ Monthly ☐ Quarterly ☐ Annual ☒ One-Time ☐ Other:

If AL submitted in compliance with a Commission order, indicate relevant Decision/Resolution #: D.20-06-017

Does AL replace a withdrawn or rejected AL? If so, identify the prior AL: No

Summarize differences between the AL and the prior withdrawn or rejected AL:

Confidential treatment requested? ☐ Yes ☒ No

If yes, specification of confidential information:

Confidential information will be made available to appropriate parties who execute a nondisclosure agreement. Name and contact information to request nondisclosure agreement/ access to confidential information:

Resolution required? ☐ Yes ☒ No

Requested effective date: 7/16/20

No. of tariff sheets: 0

Estimated system annual revenue effect (%): N/A

Estimated system average rate effect (%): N/A

When rates are affected by AL, include attachment in AL showing average rate effects on customer classes (residential, small commercial, large C/I, agricultural, lighting).

Tariff schedules affected: N/A

Service affected and changes proposed¹: N/A

Pending advice letters that revise the same tariff sheets: N/A

¹Discuss in AL if more space is needed.

Protests and all other correspondence regarding this AL are due no later than 20 days after the date of this submittal, unless otherwise authorized by the Commission, and shall be sent to:

CPUC, Energy Division
Attention: Tariff Unit
505 Van Ness Avenue
San Francisco, CA 94102
Email: EDTariffUnit@cpuc.ca.gov

Name: Erik Jacobson, c/o Megan Lawson
Title: Director, Regulatory Relations
Utility Name: Pacific Gas and Electric Company
Address: 77 Beale Street, Mail Code B13U
City: San Francisco, CA 94177
State: California Zip: 94177
Telephone (xxx) xxx-xxxx: (415)973-2093
Facsimile (xxx) xxx-xxxx: (415)973-3582
Email: PGETariffs@pge.com

Name:
Title:
Utility Name:
Address:
City:
State: District of Columbia Zip:
Telephone (xxx) xxx-xxxx:
Facsimile (xxx) xxx-xxxx:
Email:

Clear Form

**PG&E Gas and Electric
Advice Submittal List
General Order 96-B, Section IV**

AT&T	Downey & Brand	Pioneer Community Energy
Albion Power Company	East Bay Community Energy	Redwood Coast Energy Authority
Alcantar & Kahl LLP	Ellison Schneider & Harris LLP	Regulatory & Cogeneration Service, Inc.
	Energy Management Service	SCD Energy Solutions
Alta Power Group, LLC	Engineers and Scientists of California	
Anderson & Poole		
Atlas ReFuel	GenOn Energy, Inc.	SCE
BART	Goodin, MacBride, Squeri, Schlotz & Ritchie	SDG&E and SoCalGas
Barkovich & Yap, Inc.	Green Power Institute	SPURR
California Cotton Ginners & Growers Assn	Hanna & Morton	San Francisco Water Power and Sewer
California Energy Commission	ICF	Seattle City Light
California Public Utilities Commission	IGS Energy	Sempra Utilities
California State Association of Counties	International Power Technology	Southern California Edison Company
Calpine	Intestate Gas Services, Inc.	Southern California Gas Company
	Kelly Group	Spark Energy
Cameron-Daniel, P.C.	Ken Bohn Consulting	Sun Light & Power
Casner, Steve	Keyes & Fox LLP	Sunshine Design
Cenergy Power	Leviton Manufacturing Co., Inc.	Tecogen, Inc.
Center for Biological Diversity		TerraVerde Renewable Partners
		Tiger Natural Gas, Inc.
Chevron Pipeline and Power	Los Angeles County Integrated	TransCanada
City of Palo Alto	Waste Management Task Force	Troutman Sanders LLP
	MRW & Associates	Utility Cost Management
City of San Jose	Manatt Phelps Phillips	Utility Power Solutions
Clean Power Research	Marin Energy Authority	Water and Energy Consulting Wellhead
Coast Economic Consulting	McKenzie & Associates	Electric Company
Commercial Energy		Western Manufactured Housing
Crossborder Energy	Modesto Irrigation District	Communities Association (WMA)
Crown Road Energy, LLC	NLine Energy, Inc.	Yep Energy
Davis Wright Tremaine LLP	NRG Solar	
Day Carter Murphy		
Dept of General Services	Office of Ratepayer Advocates	
Don Pickett & Associates, Inc.	OnGrid Solar	
Douglass & Liddell	Pacific Gas and Electric Company	
	Peninsula Clean Energy	