

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3298



May 6, 2011

**Advice Letter 3820-E**

Jane K. Yura  
Vice President, Regulation and Rates  
Pacific Gas and Electric Company  
77 Beale Street, Mail Code B10B  
P.O. Box 770000  
San Francisco, CA 94177

**Subject: Proposed Amendment to PG&E's Permanent Load Shifting  
Program Contract with Cypress Ltd.**

Dear Ms. Yura:

Advice Letter 3820-E is effective April 25, 2011.

Sincerely,

A handwritten signature in blue ink that reads "Julie A. Fitch".

Julie A. Fitch, Director  
Energy Division

March 25, 2011

**Advice 3820-E**

(Pacific Gas and Electric Company ID U 39 E)

Public Utilities Commission of the State of California

**Subject: Proposed Amendment to Pacific Gas and Electric Company's Permanent Load Shifting Program Contract with Cypress Ltd.****Purpose**

Pacific Gas and Electric Company (PG&E) requests approval of an amendment to its Permanent Load Shifting (PLS) program contract with Cypress Ltd. (Cypress). The contract amendment would increase the types of thermal energy storage (TES) technologies offered in the Cypress contract. The amendment is included in Attachment A. No new funding is requested.

**Background**

Permanent Load Shifting (PLS) occurs when a customer moves its energy usage from one time period to another on an on-going basis. On November 30, 2006, the California Public Utilities Commission (Commission) issued D.06-11-049 which, among other things, ordered PG&E to pursue a request for proposal (RFP) and bilateral agreements for PLS. PG&E issued a RFP for PLS contracts of a five-year duration in January 2007, seeking proposals for program options to be available starting in 2007 and able to meet PG&E's reliability requirements. PG&E's PLS contracts with Trane USA (Trane) and Cypress Ltd. (Cypress) were approved by the Commission in 2007.<sup>1</sup> Trane's contract offered ice storage air conditioning, stratified chilled water storage, and internal melt ice-on-coil technologies. However, Cypress's contract only initially offered one PLS technology, ice storage air conditioning. As of September 2009 the capacity installed under the Cypress contract was less than 200 kW, and customer acceptance for the ice storage-air conditioning technology was very low.

After consultation with Energy Division, PG&E renegotiated the program implementation contract with Cypress in 2010 to expand the list of approved technologies to additionally

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<sup>1</sup> On February 28, 2007, PG&E filed Advice 2997-E, "Advice Letter for Permanent Load Shifting Proposals in Compliance with D.06-11-049." On March 29, 2007, PG&E filed supplemental Advice 2997-E-A, requesting approval of the proposed PLS Program. On October 29, 2007, the Commission approved AL 2997-E-A, effective on July 26, 2007

include stratified chilled water storage and internal melt ice-on-coil technologies. On April 30, 2010, PG&E submitted Advice Letter (AL) 3662-E to the Commission in which PG&E requested Commission approval of the expanded Cypress contract. The Commission approved AL 3662-E on May 26, 2010, effective June 1, 2010.

Cypress has since identified multiple customers that would be good candidates for the PLS program but presently do not qualify for the program because the TES technologies that best support their specific applications were inadvertently not included when the contract was renegotiated. As a result, PG&E again renegotiated the program implementation contract with Cypress to expand the approved technologies to include ice, chilled water, or brine TES technologies. PG&E requests approval of an amendment including these changes, which would allow a broader set of viable TES technologies to participate in the program without changing the contract size, end date, or amount of program funding. The proposed amendment does not change the incentive structure for currently approved technologies. The incentive level for newly qualified technologies would be \$500 per kW shifted, which is identical to the incentive level for internal melt ice-on-coil and stratified chilled water storage technologies.

Cypress will modify all customer and market channel marketing materials (website, brochures, applications, presentations) in order to promote the benefits of the additional TES technologies and clarify the program requirements. Additionally, Cypress will work closely with the TES market value chain (end use customers, designers, manufacturers, distributors, and installers) to communicate the customer value proposition for the added TES technology and assist with qualification and feasibility requirements.

Additionally, in 2009 the Commission ordered the Investor Owned Utilities (IOUs) to study ways to expand the availability of PLS and to report the results to the Director of the Energy Division by December 1, 2010.<sup>2</sup> The IOUs' PLS study was submitted to the Director of the Energy Division on November 30, 2010.<sup>3</sup> PG&E's Application For Approval of Demand Response Programs, Pilots and Budgets, A.11-03-011 (March 1, 2011) included a proposal for a new PLS program that was informed by the results of this study for the period 2012 through 2014, and, as recommended in the PLS study, includes a much broader definition of acceptable PLS technologies. The contract changes to the current Cypress contract outlined in this advice letter are consistent with the PLS study.

### **Attachment**

Attachment A contains the redacted amendment to the Cypress contract proposed in this Advice Letter.

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<sup>2</sup> *Decision Adopting Demand Response Activities and Budgets for 2009 Through 2011*, D.09-08-027 (August 20, 2009), Ordering Paragraph (OP) 32.

<sup>3</sup> E3 and StrateGen Consulting, *Statewide Joint IOU Study of Permanent Load Shifting, Energy and Environmental Economics, Inc.* (December 1, 2010).

**Protests**

Anyone wishing to protest this filing may do so by letter sent via U.S. mail, by facsimile or electronically, any of which must be received no later than **April 14, 2011**, which is 20 days after the date of this filing. Protests should be mailed to:

CPUC Energy Division  
Tariff Files, Room 4005  
DMS Branch  
505 Van Ness Avenue  
San Francisco, California 94102

Facsimile: (415) 703-2200  
E-mail: [ijnj@cpuc.ca.gov](mailto:ijnj@cpuc.ca.gov) and [mas@cpuc.ca.gov](mailto:mas@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 also should be sent via U.S. mail (and by facsimile and electronically, if possible) to PG&E at the address shown below on the same date it is mailed or delivered to the Commission:

Jane K. Yura  
Vice President, Regulation and Rates  
Pacific Gas and Electric Company  
77 Beale Street, Mail Code B10B  
P.O. Box 770000  
San Francisco, California 94177

Facsimile: (415) 973-6520  
E-mail: [PGETariffs@pge.com](mailto:PGETariffs@pge.com)

**Effective Date**

PG&E requests that this Tier 2 advice filing become effective **April 25, 2011**, which is 31 calendar days after the date of filing.

**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 lists for A.08-06-001 and R.07-01-041. Address changes to the General Order 96-B service list should be directed to PG&E at email address [PGETariffs@pge.com](mailto:PGETariffs@pge.com). For changes to any other service list, please contact the Commission's Process Office at (415) 703-2021 or at [ProcessOffice@cpuc.ca.gov](mailto:ProcessOffice@cpuc.ca.gov).

Send all electronic approvals to [PGETariffs@pge.com](mailto:PGETariffs@pge.com). Advice letter filings can also be accessed electronically at: <http://www.pge.com/tariffs>

A handwritten signature in cursive script that reads "Jane Yura" followed by a forward slash and the initials "JAS".

Vice President, Regulation and Rates

Attachments

cc: Service List GO 96-B  
Service List A.08-06-001  
Service List R.07-01-041

# CALIFORNIA PUBLIC UTILITIES COMMISSION

## ADVICE LETTER FILING SUMMARY ENERGY UTILITY

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

Company name/CPUC Utility No. **Pacific Gas and Electric Company (ID U39 M)**

Utility type:

ELC

GAS

PLC

HEAT

WATER

Contact Person: Greg Backens

Phone #: 415-973-4390

E-mail: GAB4@pge.com

### EXPLANATION OF UTILITY TYPE

ELC = Electric

GAS = Gas

PLC = Pipeline

HEAT = Heat

WATER = Water

(Date Filed/ Received Stamp by CPUC)

Advice Letter (AL) #: **3820-E**

Tier: **2**

Subject of AL: **Proposed Amendment to Pacific Gas and Electric Company's Permanent Load Shifting Program Contract with Cypress Ltd.**

Keywords (choose from CPUC listing): **Contracts, Demand Side Management**

AL filing type:  Monthly  Quarterly  Annual  One-Time  Other

If AL filed in compliance with a Commission order, indicate relevant Decision/Resolution #: N/A

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: N/A

Is AL requesting confidential treatment? If so, what information is the utility seeking confidential treatment for: No

Confidential information will be made available to those who have executed a nondisclosure agreement: N/A

Name(s) and contact information of the person(s) who will provide the nondisclosure agreement and access to the confidential information: N/A

Resolution Required?  Yes  No

Requested effective date: **April 25, 2011**

No. of tariff sheets: N/A

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 proposed: N/A

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

CPUC, Energy Division

Tariff Files, Room 4005

DMS Branch

505 Van Ness Ave., San Francisco, CA 94102

[jnj@cpuc.ca.gov](mailto:jnj@cpuc.ca.gov) and [mas@cpuc.ca.gov](mailto:mas@cpuc.ca.gov)

Pacific Gas and Electric Company

Attn: Jane Yura, Vice President, Regulation and Rates

77 Beale Street, Mail Code B10B

P.O. Box 770000

San Francisco, CA 94177

E-mail: [PGETariffs@pge.com](mailto:PGETariffs@pge.com)

PG&E Advice 3820-E  
March 25, 2011

Attachment A



# Contract Change Order

This is Change Order ("CO") No. 3 to Contract No. 2500284508 dated 03/11/2010 between the below-named Contractor ("Contractor"), Cypress Ltd, and Pacific Gas and Electric Company ("PG&E"), a California corporation with its headquarters located at 77 Beale Street, San Francisco, California 94105. Contractor shall perform all Work under this Contract, as amended by this Change Order, pursuant to and in accordance with the terms and conditions of the Contract.

Contractor's Legal Name: Cypress LTD This Contract Change Order consists of 6 page(s).

Contractor's Address: 7 Rue Delacroix  
Coto De Caza, CA 92679

Project Name: Permanent Load Shift

Job Location: Pacifica Gas and Electric Service Territory

**CHANGES:** The Parties hereby modify the Contract referenced above as follows:

The purpose of this Change Order No. 3 is to update the Specific Conditions as referenced in Attachments 1 and 2. All other terms and conditions shall remain the same.

**ATTACHMENTS:** The following are attached to this Contract Change Order and incorporated herein by this reference.

- Attachment No. 1 Pages 3-4
- Attachment No. 2 Pages 5-6

<b>PRICING CHANGES:</b>	Previous Total Contract Value:	
	Addition or Deduction:	\$0.00
	Revised Total Contract Value:	

All other terms and conditions of the Contract, as it may have been amended by previous Contract Change Order(s), if any, shall remain the same.

**THE PARTIES, BY SIGNATURE OF THEIR AUTHORIZED REPRESENTATIVES, HEREBY AGREE TO THE TERMS OF THIS CONTRACT CHANGE ORDER.**

<b>PACIFIC GAS AND ELECTRIC COMPANY</b>		<b>CONTRACTOR: Cypress Ltd.</b>	
Signature		Signature	
Name	<del>Andrew Tang</del> Dina Schvitz	Name	Tom Smolarek
Title	<del>Sr. Director, IDSM Products</del> Portfolio Manager, Sourcing	Title	President
Date	3/2/11	Date	2/23/2011



ADMINISTRATION			
PG&E Negotiator	Christine lu	Contractor Representative	
Phone	415-973-+6955	Phone	
Email:	CXI0@PGE.COM	Email:	
Accounting Reference			

INTERNAL PG&E USE ONLY			
Distribution Date			
Distribution of Copies	<input type="checkbox"/> Document Services (Signed Original Copy) Mail Code NSD 245 MARKET ST., SAN FRANCISCO	<input type="checkbox"/> Contractor (Signed Original Copy)	
	<input type="checkbox"/> Work Supervisor	<input type="checkbox"/> Manager	
	<input type="checkbox"/> Invoice Approver	<input type="checkbox"/> Supervisor	
	<input type="checkbox"/> V.P.	<input type="checkbox"/> Sourcing/ Purchasing	
	<input type="checkbox"/> Director	<input type="checkbox"/> Law	

**SPECIFIC CONDITIONS CHANGES**

The Specific Conditions are amended as follows:

1. In Section 1.5 Implementer's program, sub-section 1.5.1.1 is deleted in its entirety and replaced with the following:

"1.5.1.1 Provide to PG&E 6,750 kW in Contracted Permanent Load Shift. Measures will be limited to ice, chilled water, or brine Thermal Energy Storage technologies."

2. In Section 1.5 Implementer's program, sub-section 1.5.1.7 is deleted in its entirety and replaced with the following:

"1.5.1.7 Implementer will be responsible for all program management including, but not limited to, customer support, feasibility studies, EM&V on 4 percent of ISAC installations and 100 percent of all non-ISAC installations, and information for PG&E to file reports, testimony, etc."

3. In Section 2 DEFINITIONS AND LIST OF ACRONYMS, the following terms and definitions are changed as follows:

"Term: Baseline Demand For A Retrofit –

Definition: The Baseline Demand for an ISAC retrofit shall be an estimation based on a) product type, b) age, and c) approved manufacturer's tables derived from CEC Title 24 ACM manual. The Baseline Demand for non-ISAC retrofit shall be based on using Energy Pro, eQuest, Trane Trace or approved equivalent whole building simulation software."

"Term: HVAC –

Definition: Heating, Ventilating, and Air Conditioning. For the purposes of this contract, HVAC also includes refrigeration."

"Term: Installation Factor –

Definition: The Installation Factor is equal to the Number of On-Peak Days for Measure divided by the Number of On-Peak Days for Current Summer Season. Shall be determined for each TES unit. The Installation Factor cannot be less than zero (0) or greater than one (1)."

"Term: Measure –

Definition: Permanent installation and commissioning of a PG&E approved device. Such devices must achieve Permanent Load Shift while maintaining Energy Neutrality."

"Term: Measure Verified Date –

Definition: The date that PG&E verified the Measure. Shall be determined for each TES unit."

"Term: Number of Load Shift Days for Measure –

Definition: For ISAC units: the number of On-Peak Days that the Measure met its thermal cooling load without any compressor electric demand occurring during that day's On-Peak Hours. Shall be determined for each ISAC unit. For non-ISAC systems: the number of On-

CCO3 2500284508 ATTACHMENT 1 SPECIFIC CONDITIONS CHANGES  
PERMANENT LOAD SHIFT  
CYPRESS LTD

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Peak Days that the Measure met its thermal cooling load at less than or equal to its Specified Measure On-Peak Hour Electric Demand level. Shall be determined for each system."

"Term: Number of On-Peak Days for Measure –

Definition: The number of On-Peak Days in the current Summer Season between the Measure Installed Date and October 31. Shall be determined for each TES unit."

"Term: Performance Factor –

Definition: The Performance Factor is equal to the Number of Load Shift Days for Measure divided by the Number of On-Peak Days for Measure. The Performance Factor shall be determined for each TES system. For ISAC units where this is less than 90 percent, the Performance Factor shall be considered zero (0). For non-ISAC systems where this is less than 97.5 percent, the Performance Factor shall be considered zero (0). The Performance Factor cannot be less than zero (0) or greater than one (1). The only exception to this requirement is for a data acquisition failure of less than 48 contiguous hours per month. PG&E, at its sole discretion, may decrease the percentage levels shown above on a case-by-case basis. Such reductions, should they occur, shall not set a precedent for further decreases."

"Term: Specified Measure On-Peak Hour Electric Demand –

Definition: For ISAC systems, 0.3 kW. For non-ISAC systems, the specified level of electric demand (in kW) the TES system is not to exceed during on-peak hours. If this level is exceeded anytime during the on-peak period for that day, the load shift was not met for that day."

4. Exhibits B, C, G, and H are amended as described in Attachment 2 Specific Conditions Exhibit Changes.
5. Contract Maximum Amount of [REDACTED] is unchanged.

ALL OTHER TERMS AND CONDITIONS REMAIN UNCHANGED.

**SPECIFIC CONDITIONS EXHIBIT B CHANGES**

Exhibit B: Payment Calculations is amended as follows:

1. Section 4 is deleted in its entirety and replaced with the following:
  - "4. Installation Payment for non-ISAC Installations. The dollar incentive for all non-ISAC installations shall be \$500/kW. The incentive will be paid upon proof of installation of the TES measure, through the implementer, to the PG&E customer utilizing the TES measure and/or their designated installer."

**SPECIFIC CONDITIONS EXHIBIT C CHANGES**

Exhibit C: Reporting Requirements is amended as follows:

2. Section 4.20.3 is renamed "4.20.3 Non-ISAC Systems"
3. Section 4.20.3.4 is deleted in its entirety and replaced with the following:

"4.20.3.4 System nominal storage capacity (ton-hrs); number of storage units"
4. Section 4.20.3.5 is deleted in its entirety and replaced with the following:

"4.20.3.5 System entering temperature at which it reaches full charge"
5. Section 4.20.3.6 is deleted in its entirety and replaced with the following:

"4.20.3.6 System leaving fluid temperature setpoint"
6. Section 4.20.3.7 is deleted in its entirety and replaced with the following:

"4.20.3.7 Description of system and facility controls"

**SPECIFIC CONDITIONS EXHIBIT G CHANGES**

Exhibit G: Functional Test Plan for SCWS and IMIOC Systems is amended as follows:

7. Exhibit G is renamed "Exhibit G: Functional Test Plan for Non-ISAC Systems"
8. The text of Exhibit G is deleted in its entirety and replaced with the following:

"Minimum requirements for functionally testing non-ISAC Systems shall include the completion of all functions and documentation listed in Appendix A (Certificate of Compliance Form) and Appendix B (Certificate of Acceptance Form of "Thermal Energy Storage Compliance Option Application Staff Draft Report", CEC-400-2006-010-SD.)"

**SPECIFIC CONDITIONS EXHIBIT H CHANGES**

Exhibit H: Monitoring, Metering and Verification Plan is amended as follows:

9. Section 1.2 is renamed "1.2 Real-time monitoring requirements for all non-ISAC TES"

10. The first sentence of section 2.1 is replaced with the following:

"Full metering shall be conducted at no less than 4 percent of all ISAC installations and 100 percent of all other installations, the selection of such sites being subject to PG&E approval."

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

AT&T	Dept of General Services	North Coast SolarResources
Alcantar & Kahl LLP	Division of Business Advisory Services	Northern California Power Association
Ameresco	Douglass & Liddell	Occidental Energy Marketing, Inc.
Anderson & Poole	Downey & Brand	OnGrid Solar
Arizona Public Service Company	Duke Energy	Praxair
BART	Dutcher, John	R. W. Beck & Associates
Barkovich & Yap, Inc.	Economic Sciences Corporation	RCS, Inc.
Bartle Wells Associates	Ellison Schneider & Harris LLP	Recurrent Energy
Bloomberg	Foster Farms	SCD Energy Solutions
Bloomberg New Energy Finance	G. A. Krause & Assoc.	SCE
Boston Properties	GLJ Publications	SMUD
Braun Blaising McLaughlin, P.C.	GenOn Energy, Inc.	SPURR
	Goodin, MacBride, Squeri, Schlotz & Ritchie	San Francisco Public Utilities Commission
Brookfield Renewable Power	Green Power Institute	Santa Fe Jets
CA Bldg Industry Association	Hanna & Morton	Seattle City Light
CLECA Law Office	Hitachi	Sempra Utilities
CSC Energy Services	In House Energy	Sierra Pacific Power Company
California Cotton Ginners & Growers Assn	International Power Technology	Silicon Valley Power
California Energy Commission	Intestate Gas Services, Inc.	Silo Energy LLC
California League of Food Processors	Lawrence Berkeley National Lab	Southern California Edison Company
California Public Utilities Commission	Los Angeles Dept of Water & Power	Spark Energy, L.P.
Calpine	Luce, Forward, Hamilton & Scripps LLP	Sun Light & Power
Cardinal Cogen	MAC Lighting Consulting	Sunshine Design
Casner, Steve	MBMC, Inc.	Sutherland, Asbill & Brennan
Chris, King	MRW & Associates	Tabors Caramanis & Associates
City of Palo Alto	Manatt Phelps Phillips	Tecogen, Inc.
City of Palo Alto Utilities	McKenzie & Associates	Tiger Natural Gas, Inc.
Clean Energy Fuels	Merced Irrigation District	TransCanada
Coast Economic Consulting	Modesto Irrigation District	Turlock Irrigation District
Commercial Energy	Morgan Stanley	United Cogen
Consumer Federation of California	Morrison & Foerster	Utility Cost Management
Crossborder Energy	NLine Energy, Inc.	Utility Specialists
Davis Wright Tremaine LLP	NRG West	Verizon
Day Carter Murphy	Navigant Consulting	Wellhead Electric Company
Defense Energy Support Center	Norris & Wong Associates	Western Manufactured Housing Communities Association (WMA)
		eMeter Corporation
Department of Water Resources	North America Power Partners	