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August 8, 2016

Advice 3744-G-A/4886-E-A
(Pacific Gas and Electric Company ID U 39 M)

Public Utilities Commission of the State of California

**Subject: Supplemental: Request for Approval of PG&E's Assembly Bill 793
Implementation Plan**

I. Purpose

Pacific Gas and Electric Company (PG&E) requests California Public Utilities Commission (Commission) approval of its proposed Assembly Bill (AB) 793¹ Implementation Plan (Plan) in accordance with the *Joint Administrative Law Judge's Ruling Providing Guidance on Compliance with AB 793 Activities* (Joint Ruling) dated June 10, 2016.² PG&E's Plan proposes to provide incentives for, and education about, energy management technologies (EMTs) through use of existing energy efficiency (EE) and demand response (DR) budgets previously authorized by the Commission. PG&E seeks Plan approval by Tier 2 advice letter.

PG&E's Plan supports the Commission's objective to bring forth "a new generation of innovative programs that will drive energy efficiency (EE) savings and load reductions through demand response, with the goal of transitioning away from traditional rebate programs as markets mature."³ To promote EMTs and further advance California's ambitious energy efficiency goals, PG&E's Plan will launch new EMT offerings on or before January 1, 2017 and additional offerings throughout 2017 and beyond for residential and small and medium business (SMB) customers. Additionally, PG&E has developed a Marketing Plan, included as an attachment to this advice letter, to educate customers on EMT incentives. The Plan is intended to help customers better understand and adopt EMTs. PG&E's AB 793 Plan is outlined below and is further described in Attachments A-F to this advice letter.

¹ Chapter 589, Statutes of 2015.

² This Ruling was jointly issued by ALJ Hymes and ALJ Fitch who preside over R.13-03-011 (demand response) and R.13-11-005 (energy efficiency), respectively.

³ *Joint Administrative Law Judge's Ruling Providing Guidance on Compliance with AB 793 Activities*, R.13-11-005 and R. 13-03-011, pp. 3-4 (June 10, 2016).

PG&E initially filed this advice letter on August 1, 2016, in compliance with the Joint Ruling. On August 4, 2016, the Commission's Energy Division requested that PG&E remove the Joint IOU Marketing Plan from its initial advice letter. Accordingly, this supplemental advice letter supersedes original advice letter 3744-G/4886-E in its entirety, and is filed for the purpose of removing references to a Joint IOU Marketing Plan. The IOUs developed a Joint IOU AB 793 Marketing Plan (Joint Plan), and will be filed separately via a separate advice letter.

II. Background

AB 793 was approved on October 8, 2015, adding Section 717 to the Public Utilities Code (PUC). The statute requires the Commission to order electric and gas corporations to develop a program no later than January 1, 2017 to provide incentives to residential or SMB customers to acquire EMTs, and to develop a plan to educate these customers about the incentive program by September 30, 2016. Section 717 states:

(a) The commission shall require an electrical or gas corporation to do all of the following:

(1) Develop a program no later than January 1, 2017, within the electrical or gas corporation's demand-side management programs authorized by the commission, to provide incentives to a residential or small or medium business customer to acquire energy management technology for use in the customer's home or place of business. The electrical or gas corporation may allow third parties or local governments to apply for incentives on behalf of customers. The electrical or gas corporation shall work with third parties, local governments, and other interested parties in developing the program. The electrical or gas corporation shall establish incentive amounts based on savings estimation and baseline policies adopted by the commission.

(2) Develop a plan by September 30, 2016, to educate residential customers and small and medium business customers about the incentive program developed pursuant to paragraph (1). The commission may require that the plan be integrated into, or coordinated with, any education campaign required by the commission.

(3) Annually report to the commission on actual customer savings resulting from the incentive program established pursuant to this section. The commission shall evaluate all electrical or gas corporation energy savings claims achieved pursuant to the incentive program in a manner consistent with commission-adopted evaluation protocols and determine if the program shall continue or be modified.

(b) For purposes of this section, 'energy management technology' may include a product, service, or software that allows a customer to better

understand and manage electricity or gas use in the customer's home or place of business.

(c) Nothing in this section shall be construed to amend or limit the ability of a community choice aggregator to apply to administer an energy efficiency or conservation program or a demand-side management program as set forth in Section 381.1.

AB 793 also amends Section 2790 of the PUC, expanding the definition of the weatherization services for low-income customers to include EMTs.

The June 10, 2016 Joint Ruling requires PG&E, Southern California Edison, San Diego Gas and Electric Company, and the Southern California Gas Company (IOUs) to file proposals that are comprehensive, innovative, and scalable, and that are responsive to the needs of the marketplace. The Joint Ruling identified specific items that should be proposed in each of the IOUs' proposals:

1. Strategies for increasing participation and deployment of current demand-side programs and offerings that meet the Legislation's definition of an energy management technology;
2. A list of all energy management technology programs and offerings that are currently not in the IOU portfolios, but will be rebated and available on January 1, 2017;
3. A comprehensive list of all energy management technology programs and offerings that meet the objectives of Section 717, but that the IOUs will not plan to launch until after January 1, 2017. For these programs and offerings, the IOUs shall provide timelines for launch and necessary actions to offer the product(s);
4. Information on all energy management technology products that are currently part of the IOU programs or will be part of the programs on January 1, 2017, with associated rebates, budgets, projected uptake, and target market for all programs and offerings;
5. A proposal for a process for reporting and tracking of Section 717 program accomplishments and savings to the Commission;
6. A list of any and all proposals to implement Section 717 which may be executed in cooperation with all regional energy networks, community choice aggregators, and/or publicly-owned utilities; and
7. A robust two-year marketing plan for energy management technologies that includes the following:
 - Strategies to be employed
 - Metrics and targets
 - Partnerships

In subsequent sections of this advice letter, PG&E details its AB 793 Plan in response to the Commission's seven requirements. PG&E describes each of its EMT offerings in subsequent attachments.

Attached documents are as follows:

- Attachment A: PG&E's existing EMT offerings
- Attachment B: Proposed EMT offerings for launch by January 1, 2017
- Attachment C: EMT offerings in development for 2017
- Attachment D: PG&E's Local Market Facilitation Plan
- Attachment E: EMT Offering Table
- Attachment F: Evaluation Measurement and Verifications Considerations

III. Overview of PG&E AB 793 Implementation Plan

Introduction

PG&E's AB 793 Implementation Plan presents a portfolio of offerings that will enable residential and SMB customers to obtain EMTs with the goal of helping customers understand and manage energy use, while also adding the value of energy management to the grid.

The AB 793 implementation Plan is part of PG&E's strategy to support its customers in pursuing deeper energy savings. Furthermore, AB 793 will play a role in achieving the state's EE and climate goals. California Senate Bill 350 requires reducing greenhouse gas emissions to 40 percent below 1990 levels by 2030, and doubling energy savings by 2030. AB 793 interventions also support the California Long Term Energy Efficiency Strategic Plan goals to "provide tools to enable customers to understand and manage their energy demand."⁴ These goals have informed PG&E's overall approach to AB 793 and selection of product, service and software offerings.

Phased Implementation Approach

PG&E will provide a diverse set of offerings to test innovative market strategies and identify offerings for territory-wide deployment through a phased implementation approach. AB 793 implementation phases are described in greater detail below:

Current Phase (2016): Continue Existing Offerings

PG&E will continue existing offerings that meet the requirements of PUC Section 717. These existing offerings form the foundation of PG&E's energy management strategy and provide customers with options to better understand and manage energy usage.

Phase 1 (Oct. 2016- Jan. 2017): Test New Offerings

PG&E will test new EE and DR offerings like smart thermostat optimization and time-of-use messaging through assessments, and will scale offerings like smart

⁴ California Long Term Energy Efficiency Strategic Plan, January 2011 Update, p. 11.

thermostat which have already been vetted through the Emerging Technologies (ET) process. PG&E will also deploy a new Marketing Plan and test several new EMT opportunities that will be evaluated for potential wider deployment in 2017 and 2018. As part of the phased approach, PG&E's EE and DR Emerging Technology Programs will be the testing ground for new potential program offerings to further understand challenges to customer usability and adoption.

Phase 2 (2017): Develop New Offerings and Evaluate

PG&E will drive greater adoption of EMTs in 2017 by leveraging existing programs and the Marketing Plan. Additionally, PG&E will explore new EMT strategies throughout 2017. New strategies include EMT and rate bundles, competitive solicitations for EMTs and innovative approaches to promote acquisition, use and maintenance of energy consuming devices. PG&E will also evaluate existing EE and DR ET assessments with the intent to scale successful efforts.

Phase 3 (2018): Build on Successes and Lessons Learned

Plans for 2018 are contingent upon the activities and evaluations in 2017. PG&E plans to evolve offerings based on lessons learned and new EMTs in the market, moving customers toward greater understanding and control over their energy use.

IV. Summary of Proposed Offerings

PG&E's AB 793 Plan includes strategies to help residential and SMB customers better understand and manage their energy use through diverse EMT offerings. As defined by PUC Section 717 (b), an EMT "may include a product, service, or software that allows a customer to better understand and manage electricity or gas use in the customer's home or place of business." Further detail on these offerings are included in Attachments A, B and C of this advice letter.

PG&E Planned AB 793 Offerings			
Phase	Current	Phase 1	Phase 2
Timeline	Available Now	For January 1, 2017	In Development for 2017
Residential Offerings	<ul style="list-style-type: none"> ▪ Advanced Power Strips ▪ Behavioral Demand Response Pilot ▪ Bill Forecasts ▪ Bring Your Own (BYO) Thermostat Demand Response Pilot ▪ Energy Alerts ▪ Energy Fitness ▪ Home Energy Checkup ▪ SmartAC™ ▪ Share My Data ▪ Stream My Data 	<ul style="list-style-type: none"> ▪ Auto Demand Response ▪ Nest Seasonal Savings Assessment ▪ Smart Thermostat Incentive ▪ Time-of-Use Management App ▪ WeatherBug Smart Thermostat Assessment 	<ul style="list-style-type: none"> ▪ Energy Engagement from School Energy Education Programs ▪ Product Bundles ▪ Residential Mobile App ▪ Smart Appliance Incentives ▪ Web-based Mobile Application
Small and Medium Business Offerings	<ul style="list-style-type: none"> ▪ Auto Demand Response ▪ Business Energy Checkup ▪ Energy Management Systems Assessment ▪ Enhanced In-Season Support for Peak Day Pricing ▪ On-Bill Financing Alternative Pathway ▪ Share My Data ▪ Stream My Data 	<ul style="list-style-type: none"> ▪ Bill Forecasts ▪ Energy Alerts 	<ul style="list-style-type: none"> ▪ Circuit Level Load Monitoring ▪ Commercial Mobile App ▪ Energy Management System Pay for Performance ▪ Managed Energy Services

V. Automated Demand Response Program Expansion

PG&E seeks approval to expand the existing Automated Demand Response (ADR) program to residential customers beginning January 1, 2017. Specifically, PG&E requests approval to provide residential customers deemed incentives for qualifying ADR and EMTs. PG&E's ADR Program offers incentives to non-residential customers for DR enabling technologies. ADR enabling technology is defined as a set of communications, such as networking, telemetry and control, that enable a DR end-use (e.g., HVAC, lighting, refrigeration) to function as a resource on the distribution or statewide grid and provide grid service. Residential EMT has advanced significantly in

the last few years, and many of these technologies offer DR functions. Residential customers would be required to participate in the ADR program for one year.

VI. Commercial Automated Demand Response Incentive Change

PG&E filed for and received approval in D. 16-06-029 for a “simplified”⁵ SMB ADR incentive program in 2017. Although not explicitly stated in the decision, PG&E interprets the language to exempt the SMB ADR measure from the 60-40 incentive split parameter and approve PG&E to pay a 100% upfront incentive similar to SCE’s ADR Express program. Based on this interpretation of the Decision, PG&E plans to adopt the 100% upfront incentive for the SMB ADR Program to help SMB customers adopt DR Enabled EMT.

VII. Low Income

The Joint Ruling does not require information on Low Income offerings in this filing⁶ and PG&E is not seeking approval of Low Income EMT offerings through this advice letter. PG&E is looking at EMT offerings that will serve the needs of Low Income customers in line with the intent of AB 793. PG&E plans to coordinate statewide with other IOUs to provide EMT offerings to low income customers through the Low Income proceedings.⁷

VIII. Funding

PG&E seeks to use budgets currently authorized pursuant to D.15-10-028 (for EE) and D.16-06-029 (for DR), within the fund shifting limits established in D.12-11-015 (for EE) and D.12-04-045 (for DR). The DR funding is only authorized for 2017, because PG&E has not yet filed its 2018 DR programs and budgets application. Therefore, PG&E hereby submits its AB 793 Plan through this Tier 2 advice letter for Commission approval as authorized by option (2) on page 7 of the Joint Ruling. CPUC approval of this filing would not increase any current rate or charge, cause the withdrawal of service, or conflict with any rate schedule or rule.

VIII. PG&E Responses to Joint Ruling Requirements

This section presents the components of PG&E’s proposed AB 793 Plan that respond directly to the seven requirements of the Joint Ruling. These responses describe PG&E’s overall strategies and plans to implement PUC Section 717 and to ultimately increase the adoption of EMTs within PG&E’s service territory.

⁵ D.16-06-029, pp. 46-47.

⁶ The *Joint Ruling*, at p.3, n. 2, states that weatherization-related requirements are being addressed separately in Application (A.) 14-11-007, et al.

⁷ The pending consolidated Low Income proceeding for the IOUs is “*Application of Southern California Edison Company (U338E) for Approval of its Energy Savings Assistance and California Alternative Rates for Energy Programs and Budgets for Program Years 2015-2017*,” A. 14-11-007, et al. (filed November 18, 2014)

1) Strategies for Increasing Participation and Deployment of Current Demand-Side Programs and Offerings that Meet the Legislation's Definition of an Energy Management Technology

PG&E currently offers a variety of EMTs, and will incorporate new EMTs into its EE and DR portfolios throughout 2017. As described in Section III *Overview of PG&E's AB 793 Implementation Plan*, PG&E proposes a phased implementation approach for AB 793, which starts with the continuation of existing offerings and promotional efforts that focus on increasing participation. Throughout 2017 and beyond, PG&E will monitor existing programs for continuous improvement opportunities and will explore new EMTs and outreach approaches to increase market penetration. PG&E provides a brief description of its strategies for increasing participation and deployment of current EMT programs and offerings, and offers specific details on programmatic, and marketing and outreach initiatives, in the attachments to this advice letter.

Deploy Marketing Plan

To increase adoption of EMTs and achieve the legislature's intent in adopting AB 793,⁸ PG&E will target customers with the highest propensity to adopt EMT offerings, provide information related to where and how to acquire EMTs, and offer incentives such as rebates or rewards that incentivize customers to take action. PG&E will use marketing to educate customers about the benefits of connecting EMTs for enhanced energy management and help increase adoption by overcoming key consumer barriers, such as price and confusion about EMT compatibility. Attachment D provides more details on PG&E's Local Market Facilitation Plan in support of AB 793 implementation. PG&E also coordinated with the other IOUs to develop the Joint IOU AB 793 Marketing Plan (Joint Plan), submitted via separate advice letter.

Work with Market Influencers

Strategic partnerships with existing and new industry partners will be important to increasing the deployment of EMTs. PG&E currently has relationships with a number of market influencers, such as local and national retailers, trade professionals and government and community partners. Opportunities for partnerships include the annual Statewide Emerging Technology Program Technology Resource Innovator Outreach (TRIO) Symposiums, where more than 80 vendors, investors, entrepreneurs, academia and other technology professionals convene to explore ways to advance innovative EE and DR technology solutions. PG&E will continue to foster mutually beneficial partnerships for supporting customers in overcoming barriers to engagement and acquisition of EMT solutions, thereby increasing the deployment of EMTs throughout PG&E's territory.

⁸ AB 793, Assembly Floor Analysis, p. 2 (Sept. 2, 2015) ("Purpose: According to the author, this bill will help to increase the deployment of energy management technologies which will provide customers with a better understanding of their energy usage so that they may make informed decisions about how to optimize their energy consumption and reduce their energy bills.")

2) A List of All Energy Management Technology Programs and Offerings that are Currently Not in the IOU Portfolios, but Will Be Rebated and Available on January 1, 2017

PG&E will launch the following EE and DR offerings on or before January 1, 2017. More detailed information about these offerings is available in Attachment A.

New Residential Offerings Available Beginning January 1, 2017

- Auto Demand Response
- Nest Seasonal Savings Assessment
- Smart Thermostat Incentive
- Time-of-Use Management App
- WeatherBug Smart Thermostat Optimization Assessment

New SMB Offerings Available Beginning January 1, 2017

- Bill Forecasts
- Energy Alerts

3) A Comprehensive List of all Energy Management Technology Programs and offerings that meet the objectives of Section 717, but that the IOUs will not plan to launch until after January 1, 2017. For these programs and offerings, the IOUs shall provide timelines for launch and necessary actions to offer the product(s);

EMT Offerings that will launch after January 1, 2017, for the residential and commercial sectors, are listed below and further described in Attachment C. PG&E will continue to collaborate with Commission staff to refine these offerings, and provide more specific timelines for launch.

New Residential Offerings in Development in 2017

- Energy Engagement from School Energy Education Programs
- Product Bundles
- Residential Mobile App
- Smart Appliance Incentive

New Small and Medium Business Offerings in Development in 2017

- Circuit Level Load Monitoring
- Commercial Mobile App
- Energy Management Systems Pay for Performance
- Managed Energy Services

PG&E also plans to use the existing Innovative Design for Energy Efficiency Approaches (IDEEA) 365 Solicitation, Technology Resource Innovation Program (TRIP) Solicitation, the Request for Information process and the Emerging Technologies

Coordinating Council Idea Proposal Form (<http://www.etcc-ca.com/idea-proposal-form>) to identify new EMTs and vendors to deploy EMTs.

4) Information on all energy management technology products that are currently part of the IOU programs or will be part of the programs on January 1, 2017, with associated rebates, budgets, projected uptake, and target market for all programs and offerings;

Information on the product, service or software offerings that are currently part of PG&E's Plan or will be part of the plan by January 1, 2017, including the rebate level, 2017 budget amount, target customers and projected uptake of measure where available, is included in Attachment E.

5) A proposal for a process for reporting and tracking of Section 717 program accomplishments and savings to the Commission;

PG&E will maintain a list of EMT measures (identifiable by unique measure codes) that meet the requirements of Section 717. PG&E will track and report on AB 793 measures as part of the quarterly data submission to the Commission. Savings will be reported and/or tracked with deemed, customized, or NMEC approaches varying by program or measure as determined appropriate with commission staff. PG&E proposes to include a summary of AB 793 accomplishments as part of EE and DR annual reporting to include total energy savings from AB 793 measures and other key metrics as proposed for individual measures.

For each EMT measure that meets the definition of an energy management technology under AB793, reporting and tracking of savings will follow typical procedures for the respective measure:

1. For measures that have an approved existing workpaper, such as advanced power strips, savings are tracked by the program continually and reported on a quarterly basis following current regulatory guidelines. By June of each year, savings values are finalized for the previous year. Given that most EMT measures under AB793 are expected to rely on a workpaper, PG&E proposes to report AB793 relevant savings after yearly Standard Tracking Database (STDB) data is finalized.
2. For EMT measures that have workpapers which are under development, PG&E may elect to pay customer incentives in advance of the workpaper approval to comply with the intent of AB793. In such cases, PG&E will report null savings values to the STDB for these measures until deemed savings values are approved.
 - a. If and once deemed ex ante savings values are approved, PG&E will file an amended claim to update applicable null values in the STDB with approved ex ante values.

- b. If deemed ex ante savings values cannot be approved, PG&E will file an amended claim to update applicable null values in the STDB with approved ex post values.
3. For widget based EMT measures that are not appropriate for a deemed workpaper approach, or are not subject to active workpaper development, PG&E will follow the Customized program tracking and reporting approach using the CMPA for active projects and reporting completed projects to the STDB.
4. For measures that are not allowed to rely on workpapers (notably, behavior-type measures, which must rely on ex-post evaluation instead of ex-ante estimates), PG&E will report savings once the results from the ex-post evaluation becomes available.

In addition to tracking of success metrics, PG&E will continue the efforts currently underway to better understand the various impacts of these energy-management measures – including EE electric and gas savings, customer experience, and customer satisfaction. Due to the unique, inherent risks in the nascent EMT market, as well as the complexities involved with estimating EE effects of EMTs, PG&E proposes creating an EMT Evaluation, Measurement and Verification (EM&V) working group composed of Program Administrators, and Commission EM&V and ex ante staff to maximize the effectiveness of these evaluation efforts and ensure they meet the needs of both Commission staff evaluators, ex-ante staff and consultants. Additional EM&V topics are discussed in Attachment F.

6) A list of any and all proposals to implement Section 717 which may be executed in cooperation with all regional energy networks, community choice aggregators, and/or publicly-owned utilities;

PG&E plans to evaluate specific opportunities to develop proposals and develop statewide workpapers in coordination with other program administrators in 2017. PG&E also plans to use existing BayREN and MCE residential and/or SMB programs as channels to deploy EMTs, as applicable. PG&E has engaged in exploratory conversations with BayREN and MCE to better understand the most optimal ways to coordinate and use these existing channels. PG&E will continue coordinating with BayREN and MCE throughout 2016 and 2017 to determine the right opportunities for partnering.⁹ For new EMTs, PG&E recommends that all PAs include plans for EMTs as part of their Business Plans and Implementation Plans as appropriate. Additionally, PG&E's ET teams engage very closely with the Emerging Technology Coordinating Council, a collaborative of all the IOUs and several POU's in CA to coordinate in the development of new ET opportunities, including EMTs.

⁹ When MCE or another CCA obtains demand response incentives for its own customers from PG&E under Section 717(a)(1), the CCA customers will be treated as participating in a PG&E DR program for cost recovery since the incentive is funded by PG&E.

7) A robust two-year marketing plan for energy management technologies that includes the following:

- **Strategies to be employed**
- **Metrics and targets**
- **Partnerships**

PG&E's Local Market Facilitation Plan (Local Plan) is intended to move customers through their energy management journey towards adoption of EMTs. PG&E will also coordinate with the IOUs to implement a Joint Marketing Plan. The Joint Plan aligns the IOUs' with common metrics, goals, and customer segments, and synchronizes with marketing efforts of the Energy Upgrade California Statewide campaign. PG&E's Local Market Facilitation Plan addresses the overall issue of low customer awareness and adoption of EMTs for residential and small and medium business customers. The Local Plan will educate and encourage the adoption of solutions which have the highest impact on customers' energy usage and to prepare residential customers for transition to Time-of-Use rates in 2019. PG&E's Local Market Facilitation Plan is provided in detail in Attachment D.

Protests

Anyone wishing to protest this filing may do so by letter sent via U.S. mail, facsimile or E-mail, no later than August 29, 2016, which is 21 days¹⁰ after the date of this filing. 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

¹⁰The 20-day protest period concludes on a weekend. PG&E is hereby moving this date to the following business day.

Pacific Gas and Electric Company
77 Beale Street, Mail Code B10C
P.O. Box 770000
San Francisco, California 94177

Facsimile: (415) 973-7226
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

PG&E requests that this Tier 2 advice filing become effective on regular notice, September 7, 2016, which is 30 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 list for R.13-11-005 and R.13-09-011. 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 filings can also be accessed electronically at: <http://www.pge.com/tariffs/>.

/S/

Erik Jacobson
Director, Regulatory Relations

Attachments

cc: Service List R.13-11-005 and R.13-09-011

Attachments:

Attachment A: Existing AB 793 Offerings

Attachment B: AB 793 Energy Management Technology Offerings Proposed for Launch on or before January 1, 2017

Attachment C: AB 793 Energy Management Technology Offerings In Development for 2017

Attachment D: PG&E's Local Market Facilitation Plan

Attachment E: Energy Management Technology Offering Table

Attachment F: Evaluation, Measurement and Verification Considerations for AB 793

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: Kingsley Cheng

Phone #: (415) 973-5265

E-mail: k2c0@pge.com and PGETariffs@pge.com

EXPLANATION OF UTILITY TYPE

(Date Filed/ Received Stamp by CPUC)

ELC = Electric

GAS = Gas

PLC = Pipeline

HEAT = Heat

WATER = Water

Advice Letter (AL) #: **3744-G-A/4886-E-A**

Tier: 2

Subject of AL: **Supplemental: Request for Approval of PG&E's Assembly Bill 793 Implementation Plan**

Keywords (choose from CPUC listing): Compliance, Energy Efficiency

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: _____

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: _____

Resolution Required? Yes No

Requested effective date: **September 7, 2016**

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

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

Protests, dispositions, and all other correspondence regarding this AL are due no later than 21 days¹ after the date of this filing, unless otherwise authorized by the Commission, and shall be sent to:

California Public Utilities Commission

Energy Division

EDTariffUnit

505 Van Ness Ave., 4th Flr.

San Francisco, CA 94102

E-mail: EDTariffUnit@cpuc.ca.gov

Pacific Gas and Electric Company

Attn: Erik Jacobson

Director, Regulatory Relations

c/o Megan Lawson

77 Beale Street, Mail Code B10C

P.O. Box 770000

San Francisco, CA 94177

E-mail: PGETariffs@pge.com

¹ The 20-day protest period concludes on a weekend. PG&E is hereby moving this date to the following business day.

Attachment A

Existing AB 793 Offerings

Attachment A provides an overview of PG&E's existing AB 793 offerings that meet the definition of energy management technology (EMT) product, software or service offerings as defined in AB 793. PG&E plans to continue offering these products and tools into 2017 and beyond.

Existing PG&E AB 793 offerings are as follows:

Existing Residential Offerings

- Advanced Power Strips
- Behavioral Demand Response Pilot
- Bill Forecasts
- Bring Your Own (BYO) Thermostat Demand Response Pilot
- Energy Alerts
- Energy Fitness
- Home Energy Checkup
- Share My Data
- SmartAC™
 - General Program
 - Plus SmartRate™
 - Targeted Design Side Management (TDSM)
- Stream My Data

Existing Small and Medium Business (SMB) Offerings

- Auto Demand Response
- Business Energy Checkup
- Energy Management Systems Assessment
- Enhanced In-Season Support for Peak Day Pricing
- On-Bill Financing Alternative Pathway
- Share My Data
- Stream My Data

Existing Residential Product Offering Descriptions

Advanced Power Strips

Sector: Residential, Moderate and Low Income

Offering Type: Hardware, Service -- Energy Efficiency

Description: Direct installation of Advanced Power Strips through the Moderate Income Direct Install (MIDI) and Energy Savings Assistance (ESA) programs, as well as Energy Fitness, a government/community partnership program offered through RHA. The power strips are included as free add-ons when other products are installed. The Tier 2 Advanced Power Strips included in the MIDI program use television remote infrared remote sensing and true Root Mean Squared (RMS) power sensing technologies. The Tier 1 Advanced Power Strips included in the ESA program use master and slave technology. Partners include Richard Heath and Associates, Synergy, Embertec and TrickleStar.

Additional Information: Additional information about advanced power strips is included in D.14-08-030, p. 124 (OP 54).

Behavioral Demand Response

Sector: Residential, Low Income

Offering Type: Service – Demand Response

Description: A pilot program, in partnership with oPower, encouraging consumers to shift and/or reduce their energy consumption outside peak demand days through targeted communications. Communications include:

- Welcome letter introducing the program
- Pre-event notifications showing prior performance and tips
- Post-event notifications with performance results including comparisons to neighbors

Nexant will evaluate the pilot program using designed randomized control trial through the existing Home Energy Report (HER) program.

Additional Information: Additional information on Behavioral Demand Response is included in PG&E's Filing for 2017 Bridge Funding for Demand Response, submitted February 1, 2016.

Bill Forecasts - Residential

Sector: Residential, Low Income

Offering Type: Software – Energy Efficiency

Description: Bill Forecast for residential customers is an easy-to-understand bill analysis tool that includes a forecast of a customer's bill as early as seven days into the billing cycle, a comparison with the same month's bill from the previous year, and detailed information about what is driving the changes in a customer's bill. Bill Forecast allows customers to understand their near real-time consumption in the familiar monthly bill context, making it easier to understand how they are using energy and how they can manage it.

Additional Information: Bill Forecast can be accessed via My Account via www.pge.com.

Bring Your Own (BYO) Thermostat Demand Response Pilot

Sector: Residential, Demand Response

Offering Type: Service – Demand Response, Hardware

Description: The pilot leverages customers in seven designated substation areas that could benefit from targeted demand side resources in 2016. PG&E has contracted with three providers of smart thermostat technology (device or platform), Nest, WeatherBug and EnergyHub on a demand response approach that uses already installed smart thermostats. The vendors will be responsible for recruitment, incentive payment and customer support. PG&E will validate participants to ensure no overlap with SmartRate™, SmartAC™, Time-of-Use pilot and other third party programs. The vendors have been given flexibility in offering incentive levels and event notifications.

Additional Information: Additional information on the Bring Your Own Thermostat Demand Response Pilot is included in PG&E's Filing for 2017 Bridge Funding for Demand Response, submitted February 1, 2016.

Energy Alerts - Residential

Sector: Residential, Low Income

Offering Type: Software, Service – Energy Efficiency

Description: Energy Alerts allow customers to set a monthly bill alert amount and receive a notice when their bill is projected to exceed that amount. Energy Alerts can be sent after the first week of a billing cycle when a customer's energy use is projected to exceed the amount they have specified. Energy Alerts can be delivered via email, text or automated phone message based on the customer's preference. These alerts help customers reduce their energy bills by setting goals, avoiding high bills through early notification, and avoiding crossing into higher tiers.

Additional Information: Customers can enroll in Energy Alerts by signing into My Account via www.pge.com/energyalerts.

Home Energy Checkup

Sector: Residential

Offering Type: Software – Energy Efficiency

Description: The Home Energy Checkup is available to all residential customers through My Account pge.com. The tool uses hourly SmartMeter™ data along with other customer insights to make it easy for customers to find energy savings ideas that are tailored to how they use energy. The tool is progressive in nature, continually learning based on the information the customer provides. Home Energy Checkup provides recommendations across energy efficiency, demand response, and distributed generation, including behavioral changes. Over 200,000 residential customers have completed the Home Energy Checkup since 2013. The tool continues to be marketed through income qualified programs and mass marketing.

Additional Information: The Home Energy Checkup is available within My Account via www.pge.com/homeenergycheckup.

Energy Fitness

Sector: Residential, Third Party

Offering Type: Service – Energy Efficiency

Description: The Energy Fitness program is a third party administered Direct Install Program, administered by Richard Health Associates in partnership with Home Energy Analytics, that performs data analytics using Smartmeter data to target high energy users with inefficient homes for no or low cost measures in targeted counties in PG&E's service territory. The program is planning to add new measures in 2017 including smart thermostat, advanced power strips and includes a customer Home Energy Reports to help customers better manage energy use. The program aims to facilitate penetration of targeted measures including Tier II advanced power strips, smart thermostat and provide energy education and feedback to homes that have a significant opportunity to benefit from energy savings due to high bills.

Additional Information: Additional information on the Energy Fitness program can be found in PG&E's Energy Fitness Program Implementation Plan, under Third Party PIPs on EE Stats.

Share My Data – Third-Party Connectivity - Residential

Sector: Residential, Low Income and SMB

Offering Type: Service – Energy Efficiency

Description: Share My Data Third Party connectivity is an existing service offered to all PG&E customers providing customer and third-parties access to a customer’s PG&E usage and billing data via an Application Programming Interface (API) or to the customer via direct download. This offering, the same as “Green Button Connect,” allows customers to share data with third parties.

Additional Information: Information on the Share My Data program can be found at [Advice Letter 4378-E-A dated 14 August 2014.](#)

Smart AC™ General Program

Sector: Residential, Low Income

Offering Type: Hardware, Service – Demand Response

Description: Customers receive a free installed SmartAC™ load control receiver and a \$50 credit to participate in the SmartAC™ program. The SmartAC™ program allows for automated demand response by cycling air conditioners during peak day events. Evaluation provided by Nexant. Partners include Enertouch (Goodsense) and Eaton’s Cooper Power Systems.

Additional Information: Additional information on the Smart AC program is included in PG&E’s Filing for 2017 Bridge Funding for Demand Response, submitted February 1, 2016.

Smart AC™ Targeted Demand Side Management (TDSM)

Sector: Residential, Low Income

Offering Type: Hardware, Service – Demand Response

Description: A partnership with “Threshold, We Open Doors” to recruit customers to the SmartAC™ program in areas served by seven designated substations. Customers are offered a \$100 incentive to participate in the existing Smart AC program.

Additional Information: Additional information on the Smart AC program is included in PG&E’s Filing for 2017 Bridge Funding for Demand Response, submitted February 1, 2016.

Smart AC™ + SmartRate™

Sector: Residential, Low Income

Offering Type: Hardware, Service – Demand Response

Description: SmartRate™ customers receive a free installed SmartAC™ load control receiver and a \$50 credit when they also participate in the SmartAC™ program. The SmartAC™ program allows for automated demand response by cycling air conditioners during peak day events. Evaluation provided by Nexant. Partners include Enertouch (Goodsense) and Eaton's Cooper Power Systems.

Additional Information: Additional information on the Smart AC program is included in PG&E's Filing for 2017 Bridge Funding for Demand Response, submitted February 1, 2016.

Stream My Data - Residential

Sector: Residential, Low Income and SMB

Offering Type: Service – Energy Efficiency, Demand Response

Description: A service offered to all PG&E SmartMeter™ customers that allows a ZigBee enabled Home Area Network (HAN) or gateway device to connect directly to the customer's meter for real-time data access. This includes real time usage, price, billing information, and SmartRate™ or Peak Day Pricing (PDP) event alerts.

Additional Information: Information on Stream My Data can be found at www.pge.com/streammydata

Existing Small and Medium Business AB 793 Product Offerings

Automated Demand Response - Commercial

Sector: Commercial

Offering Type: Service – Demand Response

Description: The Automated Demand Response (ADR) Program provides incentives and technical assistance for customers investing in EMTs that also enable them to perform demand response (DR). It encourages customers to expand their energy management capabilities by participating in DR programs using automated electric controls and management strategies. Customers who sign up to participate in the ADR program will receive automated event signals from PG&E. These signals will be sought out by a technical solution on site that initiates pre-programmed DR strategies. In 2017, PG&E will offer an additional option of deemed incentives to SMB customers, for certain end uses, based on average kW reductions, to make it easier for SMBs to apply for ADR incentives. SMB customers could elect to have their load shed determined either by the deemed kW, which is based on customer type, end use, operation, level of participation, and climate zone (for weather sensitive load), or by the traditional calculated approach. In the former case, the incentive amount will be calculated by

applying the ADR SMB incentive rate to the deemed kW. As stated in the body of this advice letter, PG&E plans to adopt the 100% upfront incentive for the SMB ADR Program to help SMB customers adopt DR Enabled EMT.

Additional Information: Additional information on the Automated Demand Response program is included in PG&E's Filing for 2017 Bridge Funding for Demand Response, submitted February 1, 2016.

Business Energy Checkup

Sector: Commercial

Offering Type: Software -- Energy Efficiency, Demand Response, Distributed Generation

Description: PG&E provides the Business Energy Checkup for SMB customers through My Account on pge.com. The Business Energy Checkup uses hourly SmartMeter™ data, customer-specific site and business data to provide energy-saving recommendations to small and medium business customers tailored to their facility and business. The Business Energy Checkup is a progressive audit tool that allows customers to track their energy use, get energy-saving recommendations and help identify what could be wasting energy in their businesses.

Additional Information: PG&E Business Customers can access the Business Energy Checkup at www.pge.com/businessenergycheckup.

Energy Management Systems Assessment

Sector: Commercial

Offering Type: Software, Service, Product - Energy Efficiency

Description: PG&E is recruiting 10 SMB customers for an Emerging Technologies assessment of integrated control systems (HVAC, lighting and plug load) that are currently on the market. Targeted host sites include stand-alone retail, office, school, and specialty/fast food. The project will assess to what extent customers are able to engage with and manage their energy use using web portals and smartphone applications. The project is currently in the recruiting phase and after 12 months of post-install monitoring, the final report will be delivered in Q4 2017.

Additional Information: The final report will be posted to the Emerging Technologies Coordinating Council in Q4 2017.

Enhanced In-Season Support for Peak Day Pricing

Sector: Commercial

Offering Type: Service - Marketing Campaign for Pricing Products

Description: Enhanced In-Season Support is a marketing campaign that targets SMB customers on Peak Day Pricing (PG&E's non-residential Critical Peak Pricing program) to help increase awareness of and response to Peak Day Pricing Events. Enhanced In-Season Support utilizes email and text messaging to encourage customers' curtailment behavior during Events. Customers receive alerts a day-ahead that encourage a pre-commitment, a reminder day-of with tips to conserve and a post-event follow up message providing feedback on event day energy use.

Additional Information: More information on Enhanced In-Season Support for Peak Day Pricing is available via PG&E's Time-Varying Pricing Quarterly Updates and Peak Day Pricing Semi-Annual Reports

On-Bill Financing Alternative Pathway

Sector: Small and medium business

Offering Type: Service – Financing

Description: The On-Bill Financing (OBF-AP) Alternative Pathway program is a variation of PG&E's existing On-Bill Financing (OBF) program that increases the potential for participating contractors to deliver energy savings. PG&E's existing OBF program offers non-residential customers 0% interest loans to finance the purchase and installation of energy efficiency measures when they also receive a rebate or incentive through PG&E's energy efficiency program. The OBF-AP provides a process for customers to secure an OBF loan without requiring participation in an EE rebate or incentive program, reducing risk for both the customer and contractor. In addition, OBF-AP will allow measures that do not currently receive a rebate or incentive to be financed, including EMTs in keeping with the goals of AB 793. OBF-AP is designed to leverage market actors such that contractors can develop energy savings interventions that align with businesses' and customers' needs.

Additional Information: Plans for the OBF-AP program are outlined in Advice 3697-G-A/4812-E-A.

Share My Data - Commercial

Sector: Small and medium business

Offering Type: Service – Energy Efficiency, Demand Response

Description: An existing service offered to all PG&E customers providing customer and third-party access to a customer's PG&E usage and billing data via an Application Programming Interface (API) or to the customer via direct download.

Additional Information: Information on the Share My Data program can be found at [Advice Letter 4378-E-A dated 14 August 2014](#)

Stream My Data - Commercial

Sector: SMB

Offering Type: Service – Energy Efficiency, Demand Response

Description: A service offered to all PG&E SmartMeter™ customers that allows a ZigBee enabled Home Area Network (HAN) or gateway device to connect directly to the customer's meter for real-time data access. This includes real time usage, price, billing information, and SmartRate™ or Peak Day Pricing event alerts.

Additional Information: Information on Stream My Data can be found at www.pge.com/streammydata

Attachment B

AB 793 Energy Management Technology Offerings Proposed for Launch on or before January 1, 2017

Attachment B provides information on proposed, new energy management technology (EMT) offerings which are not part of PG&E's existing energy efficiency or demand response portfolios, but will be launched on or before January 1, 2017. The new, January 1, 2017, EMT offerings are part of the first implementation phase of the PG&E's larger AB 793 strategy.

Proposed Residential EMT Offerings for Launch by January 1, 2017

- Auto Demand Response
- Nest Seasonal Savings Assessment
- Smart Thermostat Incentive
- Time of Use Management App
- WeatherBug Smart Thermostat Assessment

Proposed Small and Medium Business Offerings for Launch by January 1, 2017

- Bill Forecasts
- Energy Alerts

Proposed Residential EMT Offerings for Launch by January 1

Automated Demand Response Program - Residential	
Short Description of Offering	The Automated Demand Response (ADR) Program provides incentives and technical assistance for customers investing in EMTs including smart thermostats that also enable them to perform demand response (DR). It encourages customers to expand their energy management capabilities by participating in DR programs using automated electric controls and management strategies. Customers who sign up to participate in ADR will receive automated event signals from PG&E. These signals will be sought out by a technical solution on site that initiates pre-programmed DR strategies.
Program Partners	Vendors that provide ADR certified technologies. For a list of ADR certified technologies, please visit www.openadr.org
Market Sector	Residential
Primary Intervention Strategy	Downstream incentive to customer
Offering Category	Deemed approach – Software and Hardware
Implementation Timeline	January 1 st to December 31 st , 2017 (PG&E has current budget authorization for DR programs beyond December 31 st , 2017, pursuant to D.16-06-029)
Product Delivery and Coordination	Demand Response
Proposed Incentive Level and Justification	Deemed approach - \$ rebate based on the type of DR measure, up to 100% of the measure cost, and 100% upfront incentive.
Product Qualification Requirements	ADR project eligibility applies to equipment that can be controlled through a central Energy Management System, Home Automation System or other local control system that can receive an OpenADR 2.0 a or b event signal from the PG&E's Demand Response Automation Server. The system requires no human intervention to initiate the preprogrammed load reduction sequence during a DR event.
Target Customers	The ADR Program is open to all Residential Customers who: <ul style="list-style-type: none"> • Receive electric services from PG&E. • Either already enrolled in qualifying DR programs (Smart Rate or SSP) or eligible to enroll.

Automated Demand Response Program - Residential	
Product Goals and Objectives	Auto DR Program main purpose is to transform the market by increasing adoption of DR Enabling Technologies, which would increase DR potential and activities in CA
High Level Evaluation Plan	The statewide Auto DR team will work with Demand Response Measurement and Evaluation Committee to determine if an Evaluation Plan is needed in 2017.
Proposed Evaluation Metrics	Number of applications receive, number of customers enrolled, and number of MW enrolled in the program
Proposed Budget	\$400,000 (from the existing 2017 residential ADR Program budget)

Nest Seasonal Savings Assessment	
Short Description of Offering	The Nest Seasonal Savings Assessment provides automated, software driven, HVAC controls to customers with Nest thermostats already installed in PG&E service territory. Customers are sent invitations via email, mobile app and thermostat interface. The software aims to provide incremental savings by delivering customer-specific, set-point altering algorithms to customers.
Program Partners	Nest
Market Sector	Residential
Primary Intervention Strategy	Midstream
Offering Category	Software, Service
Implementation Timeline	Launch November, 2016
Product Delivery and Coordination	Energy Efficiency Emerging Technologies Project
Proposed Incentive Level and Justification	Service is free to end-use customers
Target Customers	Existing Nest residential customers in PG&E territory
Product Goals and Objectives	<ol style="list-style-type: none"> 1. Provide proof of concept for set-point altering algorithms. 2. Evaluate if concept can be deployed territory wide.
High Level Evaluation Plan	<p>PG&E proposes to evaluate the Nest Seasonal Savings Plan Assessment using:</p> <ul style="list-style-type: none"> • Randomized Encouragement Design • Savings determined through device level data and HVAC data and assumptions • Goal is to reach a treatment group of 10,000 (out of a population of 30,000) • Seasonal Savings will run for 2 seasons (winter 2016, summer 2017), with deployment covering 8-12 weeks per season • Seeking additional input from Commission staff ex-ante team. • Plan to pursue third party evaluator once overall M&V strategy has been vetted with Commission staff ex-ante team.
Proposed Evaluation Metrics	<ul style="list-style-type: none"> • Opt-In rate, Opt-Out Rate • Estimated Savings Results • Customer Satisfaction
Proposed Budget	\$350,000 (Emerging Technologies)

Smart Thermostat Incentive	
Short Description of Offering	PG&E plans to provide a downstream smart thermostat incentive to residential customers. Customers can apply for rebate of qualified products online. The incentive will be available to all residential customers, but marketing efforts will target customers with the greatest opportunity to saving, namely those with large air conditioning load.
Program Partners	Vendors that qualify for participation include, but are not limited to: Nest, Ecobee
Market Sector	Residential
Primary Intervention Strategy	Downstream Incentive
Offering Category	Hardware
Implementation Timeline	Launch January 1, 2017
Product Delivery and Coordination	The smart thermostat incentive will be offered through the Residential Plug-Load and Appliances.
Proposed Incentive Level and Justification	PG&E will offer a \$50 rebate to offset the cost of purchasing a smart thermostat.
Target Customers	Residential customers with air conditioning
Product Goals and Objectives	Thermostat categorized as smart (enabled machine learning algorithm) and connected (with ability to communicate) with geo-fencing and occupancy sensing capabilities.
High Level Evaluation Plan	<p>The trial is set up a study as a true experiment with randomized encouragement design. Billing data of treatment group with 2,207 household with installed smart thermostat compared to control group (2,000 households). The billing analysis will look at the three thermostats individually and combined, across the three climate zones, over the course of one year. Where available from the manufacturers, thermostat-level data will also be analyzed to understand interaction and set-point factors. The study period runs from December 2015 to November 2016.</p> <p>PG&E will apply the statewide smart thermostat workpaper to claim ex ante savings, if there is an approved workpaper at time of launch. PG&E will contribute results from its Smart Thermostat Pilot to the statewide workpaper when available. If there is no approved workpaper for smart thermostat at the time of launch, PG&E will propose to</p>

Smart Thermostat Incentive	
	claim savings ex-post.
Proposed Evaluation Metrics	<ul style="list-style-type: none"> • Annual number of new connected devices • Effectiveness of device & service options offered through the HAN Validated Device program
Proposed Budget	Total Incentive Budget Estimate: \$500,000 (at \$50 incentive per unit)

Time of Use (TOU) Management App	
Short Description of Offering	<p>PG&E's Smart Phone App technology treatment is to assess customer acceptance of a multi-functional smart phone app that will convey a variety of useful information to TOU participants. This information may include pricing information, TOU-specific performance feedback, energy saving tips informed by user-specific end use load disaggregation and "gamification" features to encourage energy savings or load shifting.</p> <p>As part of the Opt-in TOU Pilot, PG&E is offering Bidgely's HomeBeat SmartPhone App to a target group of customers involved in PG&E's Opt-in Time of Use pilot.</p> <p><u>Key values of HomeBeat App:</u></p> <ul style="list-style-type: none"> • Help study participants perform better on TOU rates through an intuitive and modern smartphone App and TOU Widget • Help make it easy for study participants to save money with TOU rate plans by eliminating the guesswork about what actions save the most energy • Keeps study participants informed about their current rate plan periods and helps them always know when the next Peak period will occur through push notifications and at-a-glance indicators • Motivates pilot participants to take control of their energy and shift peak energy usage. • Keeps track of how much energy study participants use at peak over time so they can see how they're doing and make better energy decisions • Informs consumers if they are on or off Peak. • Helps study participants plan their day with a TOU day snapshot <p>Additionally, PG&E Customers need to authorize access to their data via PG&E's Share My Data platform for the Bidgely HomeBeat App to function.</p>
Program Partners	Bidgely
Market Sector	Residential
Primary Intervention Strategy	Midstream
Offering Category	Software
Implementation Timeline	Soft Launch June 2016 & Full Launch - July 2016

Product Delivery and Coordination	Pricing Products
Proposed Incentive Level and Justification	Free to Customers
Target Customers	The Pilot will target 50% of the existing Opt-in TOU Pilot participants (residential customers, CARE and non-CARE included), enrolled in one of the Time-of-Day Use study rate plans (i.e. ETOUP1,ETOUP2,ETOUP3). Target roughly 7,000 customers.
Product Goals and Objectives	PG&E's main objective in testing the Informational/Educational Smartphone App is to understand how the availability of, and active interaction with, a Smartphone app can increase satisfaction and understanding of a residential TOU rate. While the study will focus on the impact of the app on customer satisfaction and understanding of TOU, load impacts may also be estimated if a sufficient number of pilot participants choose to use the app.
High Level Evaluation Plan	Randomized Encouragement Design (RED)
Proposed Evaluation Metrics	<ul style="list-style-type: none"> • Acceptance rate i.e. Number of downloads, number of registrations, number of email clicks, frequency of visit, Time spent on the App etc. • Interest in and satisfaction with the app • Load Impacts (only if acceptance rates are high enough to have a large enough sample for load impacts)
Proposed Budget	<ul style="list-style-type: none"> • Implementation = \$500,000 • Research and Evaluation = \$75,000

WeatherBug Smart Thermostat Assessment	
Short Description of Offering	The WeatherBug plus Bring Your Own (BYO) Smart Thermostat Assessment is designed to use the data from connected thermostats to increase energy efficiency in PG&E customers' homes by providing thermostat optimization, personal Home Energy ScoreCards, and the WeatherBug Home Mobile App and Online Portal. The intervention will deliver HVAC energy savings by optimizing system performance and measure the effectiveness of generating non HVAC energy savings by providing customers with specific recommendations on additional measures (beyond the smart thermostat) that will save them the most energy.
Program Partners	VEIC, WeatherBug Home
Market Sector	Residential
Primary Intervention Strategy	Midstream
Offering Category	Software
Implementation Timeline	Launch November 2016
Product Delivery and Coordination	Energy Efficiency Emerging Technologies Project
Proposed Incentive Level and Justification	Service Free to Customers
Target Customers	Customers with Existing Smart Thermostats
Product Goals and Objectives	Proof of concept for the combination of intervention strategies
High Level Evaluation Plan	PG&E proposes the following strategies to evaluate the thermostat optimization project: <ul style="list-style-type: none"> • Randomized Encouragement Design • Savings determined through billing analysis • Goal is to reach a treatment group size of 3,000 • Optimization Algorithm will run for 12 months • M&V provided by separate consultant, quick bid planned for August
Proposed Evaluation Metrics	<ul style="list-style-type: none"> • Opt-In rate • Opt-Out Rate • Estimated Savings Results • Customer Satisfaction
Proposed Budget	\$350,000 (Emerging Technologies)

Small and Medium Business (SMB) Offerings for Launch by January 1

Bill Forecasts – Commercial	
Short Description of Offering	Bill Forecast for SMB customers is an easy-to-understand bill analysis tool that includes a forecast of a customer's bill as early as seven days into the billing cycle, a comparison with the same month's bill from the previous year, and detailed information about what is driving the changes in a customer's bill. Bill Forecast allows customers to understand their near real-time consumption in the familiar monthly bill context, making it easier to understand how they are using energy and how they can manage it.
Program Partners	FirstFuel, Genability
Market Sector	Commercial
Primary Intervention Strategy	Self-service tool available through My Account on pge.com
Offering Category	Software
Implementation Timeline	The product will be launched before Jan 1, 2017
Product Delivery and Coordination	Bill Forecast is available to all SMB customers with an account on pge.com.
Proposed Incentive Level and Justification	Free-to-end-user service
Target Customers	Small and medium business customers
Product Goals and Objectives	Help SMB customers better understand and manage their energy usage.
High Level Evaluation Plan	This offering is evaluated as part of the suite of offerings PG&E provides to help customers better manage their energy bills, such as energy alerts.
Proposed Evaluation Metrics	Number of unique customer page-views
Proposed Budget	Product delivery through broader My Account non-residential solution funds.

Energy Alerts - Commercial	
Short Description of Offering	Energy Alerts allow SMB customers to set a monthly bill alert amount and get notified when their bill is projected to exceed that amount. Energy Alerts can be sent after the first week of a billing cycle when a customer's energy use is projected to exceed the amount they have specified. Energy Alerts can be delivered via email, text or automated phone message based on the customer's preference. These alerts help customers reduce their energy bills by setting goals, avoid high bills through early notification, and avoid crossing into higher tiers.
Program Partners	FirstFuel, Genability
Market Sector	Commercial
Primary Intervention Strategy	Free email, text, or phone messages direct to customer.
Offering Category	Software
Implementation Timeline	The product will be launched before Jan 1, 2017
Product Delivery and Coordination	Energy Alerts are available to all SMB customers with an account on pge.com.
Proposed Incentive Level and Justification	Free-to-end-user service
Target Customers	Small and medium business customers
Product Goals and Objectives	Help SMB customers better understand and manage their energy usage.
High Level Evaluation Plan	This offering is evaluated as part of the suite of offerings PG&E provides to help customers better manage their energy bills.
Proposed Evaluation Metrics	Number of customer sign-ups
Proposed Budget	Product delivery through broader My Account non-residential solution funds.

Attachment C

AB 793 Energy Management Technology Offerings In Development for 2017

Attachment C provides descriptions of AB 793 energy management technology (EMT) offerings, which are being considered for development and/or expected to launch after January 1, 2017. These EMT offerings are in the early stages of development and do not currently have specific launch dates or funding allocated to them. PG&E plans to use the energy efficiency and demand response Emerging Technologies (ET) Programs and lessons learned from other existing programs to develop new EMT offerings. The descriptions below provide information on EMTs PG&E may explore throughout 2017.

Residential Products In Development

- Energy Engagement from School Education Programs
- Product Bundles
- Residential Mobile App
- Smart Appliance Incentives

Small and Medium Business Products In Development

- Circuit Level Load Monitoring
- Commercial Mobile App
- Energy Management System (EMS) Pay for Performance
- Managed Energy Services (MES)
- On-Bill Financing Alternative Pathway

Residential EMTs In Development

PG&E's vision for Residential AB 793 implementation is to help customers understand and manage their energy use through new technology, software and service options now available in the market. PG&E's future solutions will use EMTs to move toward providing "no-surprises billing" for all residential customers, incorporating messages regarding time of use (TOU) rates and bill forecasts, to provide customers with information to take action to save energy and money. PG&E will also explore bundling EMTs and incentives to drive deeper savings and provide options for its diverse customer base.

Residential Mobile Application (App)

Sector: Residential

Offering Type: Software – Energy Efficiency

Description: PG&E plans to study the effectiveness of various downloadable apps on energy conservation behaviors, including the acquisition, use and maintenance of energy management technologies.

Next Steps: Solicit study proposals from market-ready application vendors.

Proposed Timeline: Small-scale field study planned for 2017.

Energy Engagement from School Energy Education Programs

Sector: Residential

Offering Type: Service – Energy Efficiency

Description: Study the “spillover effect” that classroom energy education programs have on household energy-conservation behaviors including the acquisition, use and maintenance of energy management technologies.

Next Steps: Develop contract with study implementer to design evaluation and intervention strategy.

Proposed Timeline: Intend to launch study in advance of 2017-2018 school year.

EMT Bundles

Sector: Residential

Offering Type: Hardware, Software – Energy Efficiency

Description: The majority of the energy benefits of connected products exist in their interaction with other products. PG&E seeks to test EMT bundles that use product interaction for efficiency. PG&E also proposes to deploy a field trial of a select set of EMT bundles to test targeted customer uptake and savings potential of the technologies deployed.

Next Steps: Develop project scope and product identification for initial field roll-out.

Proposed Timeline: Develop small-scale field trial in development for early 2017 and look at potential expansion for later in 2017.

Smart Appliance Incentives

Sector: Residential

Offering Type: Product – Energy Efficiency

Description: Coordinate with statewide IOUs to determine energy efficiency of various connected appliances such as clothes washers and dryers, refrigerators and other household appliances and develop statewide consistent offerings.

Next Steps: Coordinate with Statewide IOUs and issue product solicitation.

Proposed Timeline: Identify high-potential products for evaluation through lab tests and field trials beginning in early 2017.

Small and Medium Business EMTs In Development

PG&E's vision for its SMB AB 793 implementation is to help customers understand and manage their energy use with targeted offerings for a diverse SMB customer base. PG&E's proposed solutions will span a range of EMTs, from self-service tools to turnkey interventions to deliver the technology and technical advice required to deploy and realize the benefits of EMTs.

Circuit Load Monitoring

Sector: Small and medium business

Offering Type: Software, Product – Energy Efficiency

Description: PG&E plans to study and determine the level of energy efficiency delivered by building management systems with circuit sub-metering. This technology helps customers understand how energy is being used in their building by equipment type including HVAC units, walk-in coolers, kitchen hoods and steam tables. Circuit load monitoring delivers a deeper level of understanding than current load disaggregation technology and continually optimizes operation of end uses.

Next Steps: Scope and contract for the ET project to be deployed in 2017.

Proposed Timeline: Launch ET project in Q1 2017, conduct interim evaluation after the summer of 2017 and deliver final report in Q1 2018. PG&E will expedite a product launch to Q4 2017 if strong results are shown during the interim evaluation.

Commercial Mobile App

Sector: Small and medium business

Offering Type: Software- Energy Efficiency

Description: PG&E plans to study the uptake and effectiveness of various downloadable apps for SMBs on energy conservation behaviors. This trial will identify and address segment barriers specific to SMBs engaging with their energy information.

Next Steps: Solicit study proposals from market-ready application vendors.

Proposed Timeline: Develop small-scale field study in 2017.

Energy Management System (EMS) Pay for Performance

Sector: Small and medium business

Offering Type: Service, Software, Product – Energy Efficiency

Description: Building on insights from the Residential Pay for Performance High Opportunity Program, test the effectiveness of SMB EMTs through a pay for performance model. The first intervention will test asset level monitoring and optimization.

Next Steps: Contract for field placement of EMS and evaluation design.

Proposed Timeline: Launch project in Q2 2017.

Managed Energy Services (MES)

Sector: Small and medium business

Offering Type: Service, Software, Product – Energy Efficiency

Description: This scaled field placement will test the viability of an intervention model using targeted outreach, integrated building controls, continuous customer engagement

after project completion and third party financing. The MES model lowers the upfront cost barrier to energy management, while minimizing the risk of the efficiency investment for the customer and program administrator. Projects will be financed through a third party who will incentivize contractors to ensure project performance.

Next Steps: Begin project scoping and contracting with third party partners.

Proposed Timeline: The project will be launched in early 2017 to a limited group of customers. Program viability will be assessed based on the performance of the first customer cohort.

Attachment D:

PG&E's Local Market Facilitation Plan

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I. PG&E's AB 793 Local Market Facilitation Plan

The local market facilitation plan is intended to build upon the AB 793 Joint IOU marketing plan and provide information on the effort to market PG&E's specific AB 793 offerings, to move customers along in their energy management journey. PG&E's local plan focuses on targeting customers with the highest propensity to adopt EMT offerings using methods most likely to elicit customer responses. PG&E plans to further refine the marketing plan as we continue to develop outreach strategies in preparation for a September 2016 launch.

A. AB 793 Objectives and Goals

PG&E's AB 793 marketing plan, running from September 2016 to December 2018, addresses the overall issue of low customer awareness and adoption of EMTs in residential and small and medium business customer segments. The plan is designed to educate and encourage the adoption of solutions with the highest impact on customers' energy usage and to prepare residential customers for transition to Time-of-Use (TOU) rates in 2019.

PG&E's marketing plan takes an integrated approach to help customers progress on their energy management journey by increasing their awareness and ultimately their adoption and use of energy management technologies (EMTs). The marketing efforts will highlight the variety of solutions available, underscore the benefits of adoption and help guide customer behavior change in relation to changing rates. Campaign tracking will reflect specific EMT product goals where possible.

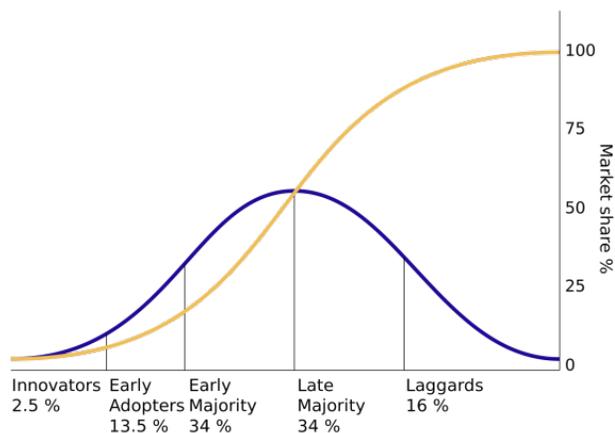
For greater effectiveness, the integrated marketing plan will leverage existing initiatives already underway in 2016 and beyond, coordinate across product portfolios, and align with state level initiatives.

B. Target Markets

Both residential and SMB customers in PG&E's territory will be targeted, encouraged to participate in relevant demand side management programs and adopt recommended solutions. PG&E will leverage customer and market research to address barriers and offer solutions that best meet a customer's needs and wants.

EMT products are in their early stages of acceptance and have only recently started to be acquired by Early Adopters¹, accounting for approximately 3.32 percent of the overall 13.5 percent (see Figure 1), leaving a significant portion of the market untapped. Therefore, there is a large opportunity and the majority of PG&E's customers that have yet to adopt EMTs. As the EMT category is still nascent, targeting future leaning customers is essential to gain ground in adoption. The potential is significant. For example, the US residential smart home market alone is expected to grow from 5.82 percent in 2016 to 18.62 percent by 2020².

It is critical for new technologies such as EMTs, to be purchased by Early Adopters in order for the product adoption cycle to progress to Early Majority. The product adoption cycle progresses when more Early Adopters purchase and start to experience the product, offering opinion leadership to other segments.³ This adopter category, more than any other, has the highest degree of opinion leadership in most systems. Potential adopters look to early adopters for advice and information about an innovation.⁴ The sharing of the delight of their purchase becomes advocacy for the product and results in increased adoption by introducing it to other market segments. This is illustrated by the Early Adopters influence on the purchase potential of the Early Majority, which creates the first mass adoption of the product.



¹ Statista (2016) <https://www.statista.com/outlook/279/109/smart-home/united-states#>

² Statista (2016) <https://www.statista.com/outlook/279/109/smart-home/united-states#>

^{3,4} Rogers, E. (1962) Diffusion of innovations. <https://commons.wikimedia.org/w/index.php?curid=18525407>

Figure 1. Rogers Diffusion of Innovation Model. [yellow line represents the innovation lifecycle for a technology; blue line represents the product adoption cycle by segment].

PG&E's marketing plan will target customers who have the greatest motivation to adopt EMTs, determined by their unique needs, along with an inherent early adopter mindset. This mindset is comprised of customers who are discerning and savvy with new technologies, enjoy being the first among their peers to try the latest and greatest technologies, and are motivated by the unique qualities of EMT solutions, such as increased convenience, comfort, efficiencies and personalization. This high opportunity target resides within each of the core overarching audiences of residential, low income and small and medium business customers (see diagram below).

PG&E has spent considerable time researching customer segments to better understand the underlying motivations, beliefs and behaviors of its customers. The research and subsequent segmentation is inclusive of demographics (such as geography, household income, home and household characteristics), behavioral and lifestyle choices (such as preferred recreational activities, media channel preferences and internet usage), and psychographics (such as attitudes toward technology and environment, or family values). The highest opportunity segments are combined into three core groups: convenience, savings and eco-conscious. These core groups are described in further detail and illustrated in Figure 2 below:

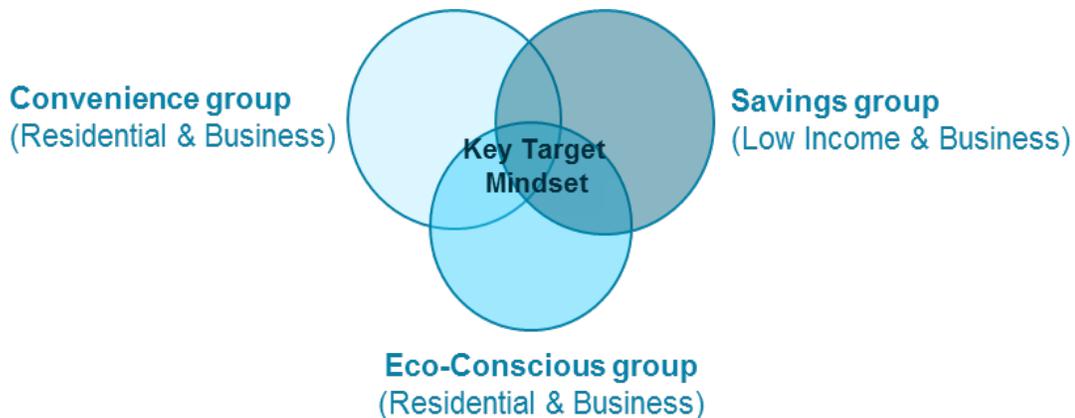


Figure 2. Opportunity for EMT adoption through the lens of customer groups. The highest opportunity lies in the Key Target Mindset, which all groups have in common.

Convenience group – *Customers are motivated by high quality solutions that create greater convenience in their lives.*

- Residential - Seek products that add simplicity and efficiency to their lives. For example, customers expect novel solutions in real time that they can access through their preferred devices such as mobile phones or tablets.
- Business - Seek automation and easy to implement products and services, yet have a low existing engagement with energy management. Seek solutions that feature simplicity. Convenience means different things to different SMBs: some businesses seek third party solutions, while others look for self-serve data to work with their existing energy controls systems.

Savings group – *Customers are motivated by solutions that create financial savings.*

- Low Income- Any incremental dollar savings are extremely important.
- Business - See energy management as part of reaching business goals, tech savvy, focused on value. Seek to improve existing resources/systems.

Eco-Conscious group – *Customers seek innovative and green-minded solutions.*

- Residential – Open to participating in energy management when it has a positive impact on reducing their emissions and carbon footprint.
- Business - Early adopters of more sophisticated solutions such as energy storage and may also seek brands known for their clean/sustainable energy management.

EMTs will be marketed to specific audiences within each of these segments appealing to their specific needs and desires. PG&E successfully implemented this approach in the business customer TOU transition. A customer's creation of an online account and/or completion of a Business Energy Checkup provided a gateway to energy engagement.

The positioning for residential and SMB customers will focus on communicating the benefits of EMTs, and illustrate how the recommended components of IDSM offerings will work together to offer greater personalization, ease of use and customer

control. As described by some vendors in the AB 793 workshop⁵, energy management is often times a secondary motivation for purchasing EMTs, therefore messaging around the overall benefits would be more appealing than energy savings singularly.

PG&E’s positioning and outreach messaging is under development and will continue to be refined in preparation for launch. The current positioning that will help inform message development is further illustrated below in Figure 3:

Proposed Positioning		
Residential - General	Residential – Low Income	Small and Medium Business
Energy management technologies provide an intuitive way for technologically savvy customers to create greater personalization and control of energy in their home by predicting, alerting and acting on varying demands and needs.	Proposed Energy management technologies through the help of Energy Savings Assistance Program (ESAP) and California Alternate Rates for Energy Program (CARE) represent no cost or low cost solutions to make energy more affordable for income-qualified customers with eligible homes who are overwhelmed by financial challenges.	Energy management technologies provide simple, automated ways for time-constrained, price-sensitive businesses to optimize energy usage for their unique operational needs.

Figure 3. Proposed positioning for outreach messaging to residential and business customers.

C. Strategies

PG&E acknowledges that each customer will be in their own unique stage of their energy management journey. To best meet customers where they are along the journey, PG&E’s tailored strategies will guide them from one stage to the next, helping customers learn and apply the tools and practices that bring better efficiency and energy management into their lives or businesses. Each marketing strategy will align with a stage in the customer journey process (Figure 4).

⁵ CPUC AB793 Workshop on June 24, 2016

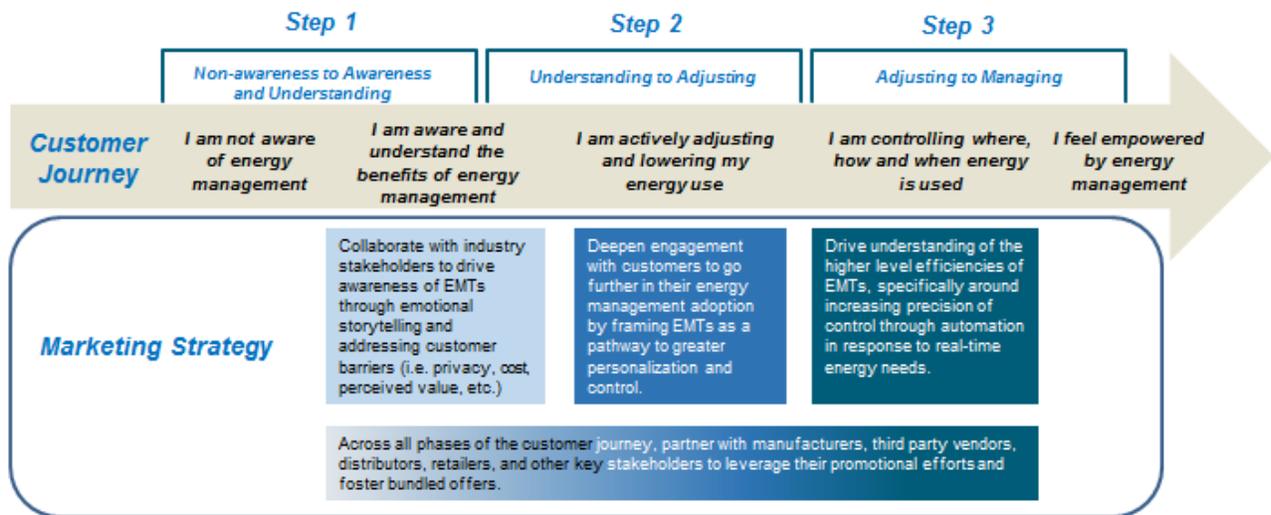


Figure 4. Illustration of customer journey from non-awareness to feeling empowered by energy management.

Step 1 - Non-awareness to Awareness and Understanding

Some customers may begin with no awareness of EMTs. According to recent research of PG&E customers, approximately 30-60 percent of customers are unaware⁶ of various available EMT solutions. To move customers into a state of awareness and understanding, PG&E creates and leverages partnerships with industry stakeholders to build awareness and address key barriers that are holding back some customers from adoption.

Vendor feedback and market research indicate⁷ that customers' interest in "smart" or "connected" technologies revolves around convenience, comfort, and safety⁸ – yet customers remain largely unaware of the energy management potential of these technologies. Several key barriers have been identified that contribute to low mass-market adoption in this space, including:

- Price and maintenance costs
- Confusion around interoperability
- Knowing what to buy and from whom

⁶ See Change Institute (July 2017) HEMS Phase II Research.

⁷ Business Insider (June 2016) <http://www.businessinsider.com/most-people-have-no-idea-where-to-buy-smart-home-products-2016-6>

Cnet (March 2016) <http://www.cnet.com/news/smart-home-buying-guide-home-automation/>

⁸ Engadget (May 2016) <https://www.engadget.com/2016/05/25/what-does-the-smart-home-industry-promises-us-in-the-future/>

- Concerns about security and privacy
- Frustrations with installation, connectivity and interoperability
- Market volatility and fear of obsolescence

One option in addressing barriers is bundling solutions that are natural complements to one another. This strategy will be addressed in the future EMT offerings. Low customer awareness will be addressed in unison with partner efforts through emotional storytelling with an emphasis on real-life stories and examples that help customers visualize what adoption might look like for them.

Step 2 - Understanding to Adjusting

After awareness and understanding has been established for EMTs, the customer will progress to a stage of actively addressing their energy use. In this stage, it will be beneficial to engage with customers by demonstrating the primary benefits of EMTs, such as:

- Customer control
- Personalization of solutions
- Ease of use
- Connection with rate management

Using real life customer energy use scenarios, marketing will highlight the value that EMTs offer in relation to customizing solutions for households and businesses' with different needs.

Step 3 - Adjusting to Managing

The next stage goes beyond solutions and integrates higher levels of energy management by introducing automation for greater customization, control and a tie-in to the response to TOU pricing. Some strategies are beneficial through multiple stages of the journey and will be implemented throughout the entire process. These include:

- Partnering with manufacturers, third party vendors, contractors, distributors, retailers and other stakeholders to leverage their promotional efforts and to create bundled offerings;

- Collaborating with other lines of PG&E business to leverage their communications to cross-promote efficiency programs;
- Promoting incentives in existing and new channels;
- Leveraging partnership networks.

Various solutions will be offered at different stages of the customer journey to help households and business best learn and select what is right for them. See Customer Journey Maps in Section 9 for more details on the solutions offered along the customer journey for residential, low income and small/medium businesses.

D. Tactical Approach

The key tactics outlined below represent how PG&E intends to help move customers through the steps of the customer journey outlined above. The overall objective of these tactics is to deliver a clear and consistent message across various channels year over year.

PG&E will continue to integrate complementary energy management messaging across multiple channels, including online, search, email, in-store, print and digital collateral. PG&E rebates and product incentives are highlighted through co-marketing and local promotional efforts. Below are some examples of tactics.

From Non-Awareness to Awareness and Understanding

A combination of tactics may be used to move customers to awareness and understanding. Tactics such as:

- *Digital media*
Digital media includes paid media, search engine marketing, social media, streaming radio and owned media such as pge.com. These work hand in hand, to drive customers to various educational pages and rebates, such as PG&E's Marketplace. For example, when customers are coming to the pay their bill or look up other energy related information, ads on pge.com will communicate the value of EMTs and drive the customers to other pages where they can learn more or apply for specific rebates. Another example: social media advertising

targets customers who are already exploring energy management options, intercepting and engaging them, linking them directly to different PG&E offers.

- *Customer Business and Home Energy Reports*

PG&E provides bi-monthly reports to targeted high energy usage customers to inform them of their energy usage in comparison to their neighbors. These reports include marketing modules for solutions that will be targeted to drive customers to learn more about EMTs and related rebates.

- *Content marketing*

Content marketing will include compelling content that effectively communicates the value proposition of EMTs and piques customers' interest through high quality relevant content such as editorials, articles, or rich media. In the customer research phase, when prospects are searching for energy information and looking for success stories from other customers' experiences are helpful. Content marketing will include links directly to PG&E's marketplace for customers to learn more and apply for rebates. Further, customer reviews and endorsements are part of a combination of influence strategies⁹ that actively persuade customers to adopt EMTs.

- *Cross-promotions*

PG&E will continue to leverage integrated product portfolio marketing efforts and cross-promotions across owned assets such as pge.com, call centers, local offices, and customer relationship managers, in order to create better recommendations for customers.

From Understanding to Adjusting Energy Usage Behavior

This stage utilizes the same tactics listed above, but goes a step further to be more personalized to the customer. For example, after PG&E has identified more about the customer, such as if they purchased a smart thermostat, targeted emails in conjunction with digital ads would promote a next-best product, service or software appropriate for

⁹ Joseph Grenny (2013) Influencer

the customer. This higher level of relevancy and personalization will help guide customers onto the next stage of the energy management journey.

From Adjusting to Managing Energy Usage

To help move customers from adjusting to managing energy use, a combination of tactics may be used, such as:

- *Direct to customer outreach—email and direct mail*
To build on the achievements of past efforts, PG&E plans to continue using direct to customer channels such as email and direct mail, which have proven to be very effective for both general and hard to reach audiences.
- *PG&E Marketplace¹⁰ in combination with digital and search retargeting*
PG&E's online resource for customers to browse, research and apply for rebates for recommended energy saving products. It is a convenient and quick way for customers to access and apply for rebated products. Retargeting drives customers back to the Marketplace who have already visited the website through digital outreach as they enter the final stages of the customer journey.
- *Point of sale merchandising*
PG&E's in-store displays provide an easy way for customers to understand the choices and features of different products. PG&E has found that leveraging retail partnerships with businesses such as Home Depot is an effective way to educate customers.
- *Customer support*
PG&E's call center, products and services teams, and customer relationship managers will be on hand to answer customer questions, as well as help customize and implement energy management strategies.

E. Local Partnerships

In moving customers from a state of non-awareness to understanding their energy usage, PG&E will help customers discover solutions through local contractors, installers, distributors, retailers and other partnerships. In addition, PG&E will

¹⁰ PG&E (2016) PG&E Marketplace <https://marketplace.pge.com/>

coordinate with other program administrators where applicable including, the Bay Area Regional Energy Network (BayREN) and Marin Clean Energy (MCE), to explore opportunities to use existing BayREN and MCE residential and/or SMB programs as channels to deploy EMTs. PG&E will continue to explore and build marketing partnerships that leverage product/supply-side partners. An example of this type of coordination can be found in the multifamily space, where PG&E is currently working with BayREN to offer up the CSI-Solar Thermal rebate program through the BayREN's multifamily energy efficiency program. In driving customers from adjusting their behavior to actively managing their energy usage, PG&E will support and expand its partnerships with local governments, schools and industry leaders.

PG&E will work to deepen the customer's relationship with EMTs and lead them to adjust their energy usage through partnerships with third parties to create more opportunities to intercept and demonstrate the benefits of EMTs. For example, PG&E's Share My Data platform offers customers' choices of third party applications to manage their real-time energy usage. Partnerships with other trusted brands will be leveraged as well, such as co-branding with Nest, to provide customers with co-branded communications from offering customers ways to reduce peak usage to saving energy seasonally.

Lastly, in order to address price point barriers, PG&E is exploring a variety of ways to help customers finance their EMTs, such as on bill financing. From partnerships with large companies such as Johnson Controls and Siemens to smaller companies such as Gridium and First Fuel, PG&E will continue to market solutions such as self-serve energy audits and data sharing, empowering customers in a landscape of changing rates.

F. Budget

PG&E plans to fund the AB 793 local ME&O activities for residential and SMB customers using previously authorized funding, established for Energy Efficiency (D.12-11-015) and Demand Response (D.16-06-029¹¹). PG&E will evaluate and optimize

¹¹ Decision 16-06-029 – Adopting Bridge Funding for 2017 Demand Response Programs and Activities. 2018 funding pending.

outreach efforts and allocated budget levels based on the offerings available each year recognizing that the portfolio may grow between now and the end of 2018.

G. Timeline

PG&E plans to steadily increase Residential, Low Income and SMB customers' ability to become familiar with their energy usage, increase their decision-making as rates change, and ultimately take advantage of an increasingly custom set of solutions both from PG&E itself and from third-party providers. PG&E currently plans to utilize the strategies outlined in this advice letter from September 2016 through December 2018.

As EMT penetration increases, PG&E will seek to bundle offers where logical, to help counter residential and SMB customers' concerns with connectivity, interoperability, and other barriers described above. For example, both from a product standpoint and a marketing standpoint, PG&E will connect smart products and rates with enabling hardware and software such as HVAC controls, plug strips and switches, appliances, circuit level monitoring, energy management displays and portals. Below is an overview of products and potential bundles that will be marketed through this plan. Further details on product offerings are available in Attachments A, B and C.

Product Phase	Current	Phase I	Phase II
Time Period	09/2016 to 12/2016	01/2017 to 12/2017	01/2018 to 12/2018
Objective	Increase customers' awareness and understanding of their energy usage	Continue to raise awareness and enable customers to adjust their energy usage in an environment of changing rates	Drive customers to actively manage their energy usage by leveraging a wider EMT ecosystem and its higher level benefits
Customer Engagement	<ul style="list-style-type: none"> ▪ Provide customers with bill alerts and self-serve data ▪ Offer customers the most beneficial products for their particular needs ▪ Incentivize customers to participate in easy ways to understand their energy usage and make simple 	<ul style="list-style-type: none"> ▪ Provide customers access to a variety of software solutions and devices ▪ Next level connected home or business, increasing their decision making ▪ Incentivize customers to either bring their own devices or invest in more complex 	<ul style="list-style-type: none"> ▪ Provide customers with energy management platforms and portals including load monitoring ▪ Support customers in leveraging advanced metering, connectivity, and energy disaggregation ▪ Incentivize customers to leverage utility

	decisions	systems	approved third party solutions on a wide scale
Residential Offerings	<ul style="list-style-type: none"> ▪ Advanced Power Strips ▪ Behavioral Demand Response Pilot ▪ Bill Forecasts ▪ Bring Your Own (BYO) Thermostat Demand Response Pilot ▪ Energy Alerts ▪ Energy Fitness ▪ Home Energy Checkup ▪ SmartAC™ ▪ Share My Data ▪ Stream My Data 	<ul style="list-style-type: none"> ▪ Auto Demand Response ▪ Nest Seasonal Savings Assessment ▪ Smart Thermostat Incentive ▪ Time-of-Use Management App ▪ WeatherBug Smart Thermostat Assessment 	<ul style="list-style-type: none"> ▪ Energy Engagement from School Energy Education Programs ▪ Product Bundles ▪ Residential Mobile App ▪ Smart Appliance Incentives ▪ Web-based Mobile Application
Small and Medium Business Offerings	<ul style="list-style-type: none"> ▪ Auto Demand Response ▪ Business Energy Checkup ▪ Energy Management Systems Assessment ▪ Enhanced In-Season Support for Peak Day Pricing ▪ On-Bill Financing Alternative Pathway ▪ Share My Data ▪ Stream My Data 	<ul style="list-style-type: none"> ▪ Bill Forecasts ▪ Energy Alerts 	<ul style="list-style-type: none"> ▪ Circuit Level Load Monitoring ▪ Commercial Mobile App ▪ Energy Management System Pay for Performance ▪ Managed Energy Services
Potential Product Bundles¹²	<ul style="list-style-type: none"> ▪ Residential SmartAC™ + SmartRate ▪ Low Income Weatherization + Stream My Data Connectivity ▪ SMB Automated Demand Response ▪ + Peak Day Pricing Enhanced In-Season Support 	<ul style="list-style-type: none"> ▪ Potential Residential bundle Customer Driven Weatherization + Nest Seasonal Savings ▪ Potential Low Income bundle ▪ Customer Driven Weatherization + ESAP Energy Alerts ▪ Potential SMB bundle ▪ Weatherbug SmartThermostat + Time of Use Management App 	<ul style="list-style-type: none"> ▪ Potential Residential bundle Web Based Mobile App + Auto Demand Response ▪ Potential Low Income bundle ▪ Product Bundle + Mobile App ▪ Potential SMB bundle ▪ Commercial Mobile App + Circuit Level Load Monitoring

Figure 5. Table of marketing activity in line with Products roadmap.

¹² Potential bundle listed are examples and may change due to timing feasibility and availability of product offerings.

H. Metrics

The overall approach to measuring effectiveness of PG&E's marketing plan will be to measure general impact on awareness of EMTs, the successful adoption of specific solutions, as well as impact of specific marketing channels and tactics. These metrics will be instrumental in evaluating PG&E's yearly progress against the marketing plan, and inform the design of subsequent objectives.

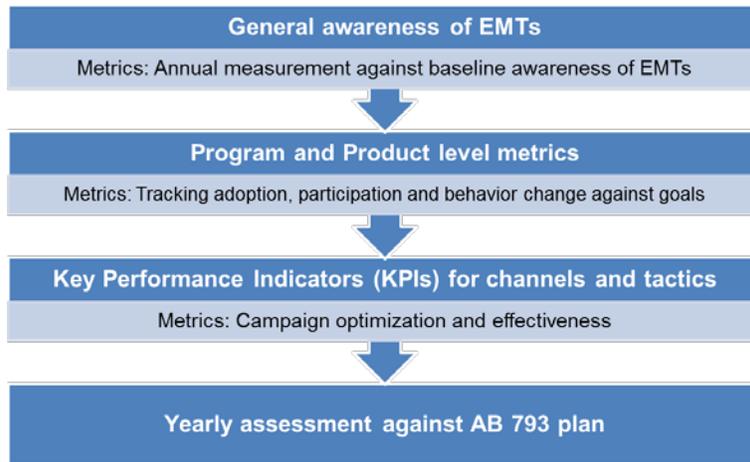


Figure 6. Illustration of marketing metrics.

To measure general customer awareness of EMTs, PG&E will be conducting a survey to determine the baseline prior to the January 1, 2017 launch. This baseline would be used to evaluate the change in the customers' level of awareness and education of EMT solutions on a yearly basis.

Program and product level metrics will be assessed monthly and quarterly against the established goals. Metrics could include adoption rates, participation in programs, and measuring behavior change (such as through bill decreases and energy saved). On a secondary level, metrics such as opt-ins and unsubscribes will be tracked to understand how customers are adopting and utilizing various EMTs.

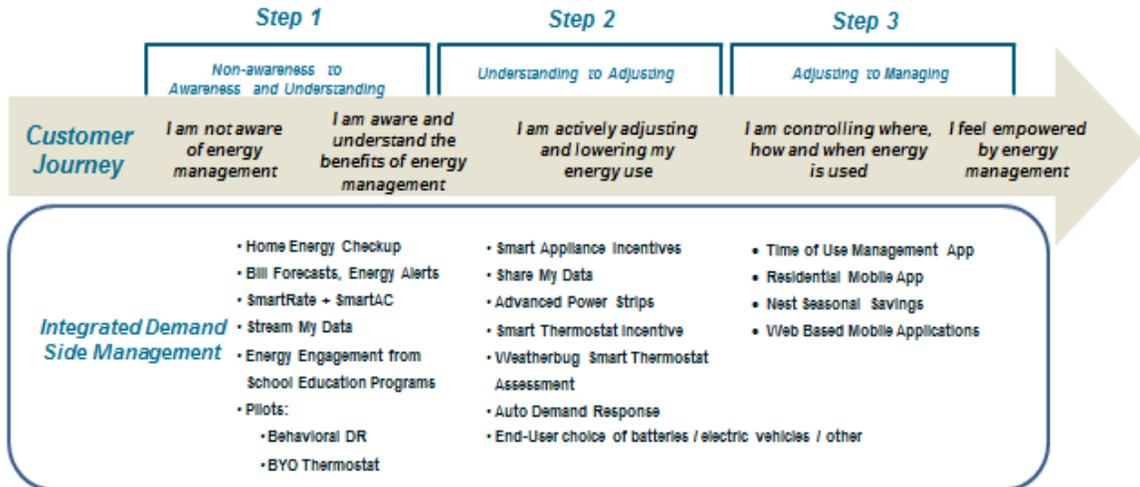
For metrics related to marketing channels and tactics, there will be measurement at the campaign level that will help ensure the optimization of tactics as well as their effectiveness. Additionally to ensure relevant messaging PG&E plans to utilize internal testing tools, such as PG&E's customer panel and the Optimizely software/platform, to understand the effectiveness of a message and fine-tune for the highest level of

persuasion. While the campaign is live and again at the end of the campaign, PG&E will track and monitor progress towards key performance indicators. Results will be tracked by channel to help determine effectiveness of each tactic along the various stages of the customer journey. Tactics may have unique key performance indicators (KPIs) depending on the objective and function of that particular channel. For example, PG&E uses open and click-through rates (CTR) to determine the effectiveness of emails and cost per click metrics for search engine marketing (SEM).

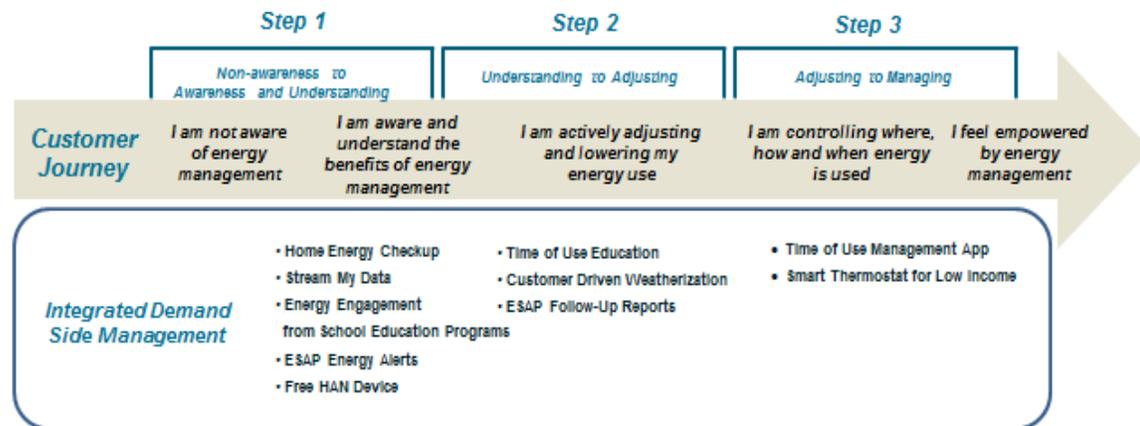
I. Customer Energy Management Journey Maps

With the customer energy management journey as a central focus, PG&E has identified specific solutions that will be beneficial to the customer at certain milestones. The following (Figure 7) is an illustration of integrating AB 793 compliant offers with other PG&E offers that support the customers in an environment of changing rates.

Residential - Customer Journey & Products



Low Income - Customer Journey & Products



Small and Medium Business - Customer Journey & Products

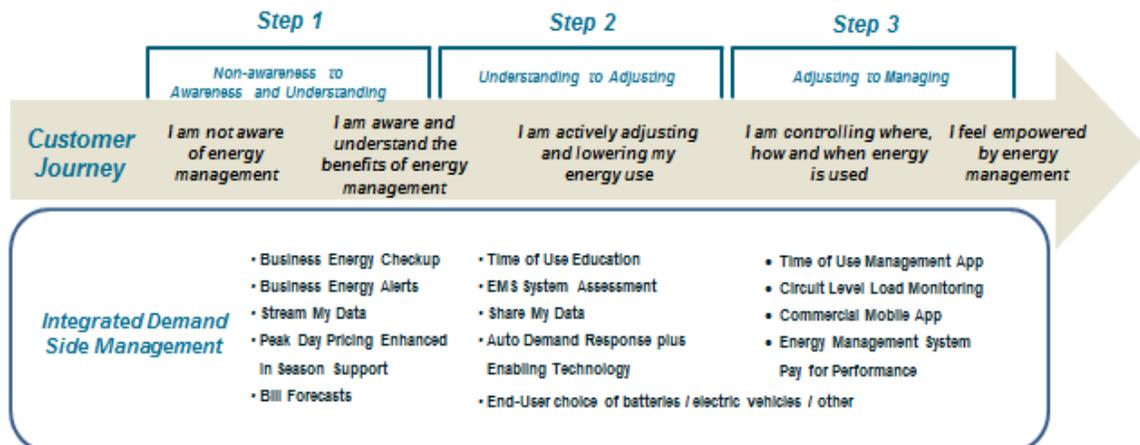


Figure 7. Customer Energy Management Journey Maps

Attachment E

Energy Management Technology Offering Table

The following table details the product, service and software offerings that are currently part of PG&E's AB 793 Plan or will be part of the plan by January 1, 2017, in response to question 4 of the Joint Ruling on AB 793:

4) Information on all energy management technology products that are currently part of the IOU programs or will be part of the programs on January 1, 2017, with associated rebates, budgets, projected uptake, and target market for all programs and offerings;

The table includes the rebate level, the planned 2017 budget amount where available, target market and projected measure uptake where available. This table provides an overview of EE and DR offerings across multiple existing offerings and offerings launching by January 1, 2017.

Offering	Rebate Level	2017 Budget	Target Market	Projected Uptake
Residential Offerings - For Launch by January 1, 2017				
Automated Demand Response	Up to \$200/kW	\$400,000	Residential customers	To be determined
Nest Seasonal Savings Assessment	No-cost to customer	\$300,000	Residential customers with existing Nest thermostats	3,000 customers
Smart Thermostat Incentive	\$50	\$500,000	Residential customers	10,000 units
Time-of-Use Management Application Assessment	No-cost to customer	\$50,000	Residential Time-of-Use Customers	3,000 customers
WeatherBug Smart Thermostat Assessment	No-cost to customer	\$300,000	Residential customers with smart thermostats	3,000 customers

Offering	Rebate Level	2017 Budget	Target Market	Projected Uptake
Residential Offerings – Existing				
Advanced Power Strips	No-cost to customer	Included in the 2017 MIDI and ESA Budgets	Low and middle income customers	MIDI: 800 in 2017 ESA: Pending
Behavioral Demand Response Pilot	No-cost to customer	\$250,000 ¹	Residential customers in selected distribution constrained areas	18% of customers in the distribution constrained target areas
Bill Forecasts	No-cost to customer	Product delivery through broader My Account non-residential solution funds	Residential customers	10% of residential customers with account on pge.com
BYO Thermostat Demand Response Pilot	0- \$60	\$200,000 ²	Residential customers in selected distribution constrained areas	To be determined (Predecessor of Res ADR)
Energy Alerts	No-cost to customer	Product delivery through broader My Account non-residential solution funds	Residential, Low Income	5% of residential customers with account on pge.com
Energy Fitness	Varies based on package of measures	\$1.5 million ³	High energy users	To be determined

¹ Budget for 2016 pilot offering; measure is under review for possible expansion.

² Budget for 2016 pilot offering; measure is being transitioned into the Residential Automated Demand Response offering, proposed in Attachment B of this advice letter.

Offering	Rebate Level	2017 Budget	Target Market	Projected Uptake
Home Energy Checkup	No-cost to customer	No incentive budget, \$550,000 budget to market	Residential, Low Income	50,000 customers in 2016
Share My Data	No-cost to customer	\$2.3 million ⁴	Residential customers	Approximately 1 million SAIDs ⁵
SmartAC™	\$50 to \$100 ⁶	\$8,300,000 ⁷	Residential customers with AC	13,500 customers ⁸
Stream My Data	No-cost to customer	\$256,000 ⁹	Residential customers	Approximately 5,000 users
Small and Medium Business Offerings-For Launch by January 1, 2017				
Bill Forecasts	No-cost to customer	No incentive budget	Small and medium business customers	10% of small and medium business customers with an account on pge.com

³ 2016 budget; This budget may be increased in 2017 pending need to target additional customers in transmission and distribution constrained areas and due to projected increase in number of customers served and additional measures available.

⁴ Budget includes both funds for services targeted at both residential and commercial customers.

⁵ Total projected SAIDs using Share My Data for data delivery. This includes CCAs leveraging Share My Data.

⁶ Standard incentive is \$50 credit on bill. Increases to \$100 for the SmartAC™ Targeted Demand Side Management (TDSM) campaign targeting customers served by seven constrained substations.

⁷ SmartAC™ program budget is \$8M. This includes SmartAC™ + SmartRate™. SmartAC™ TDSM campaign had an additional budget of \$300k.

⁸ SmartAC™ target is 12,000 new customers, including 4,000 customers with SmartRate™. SmartAC™ TDSM campaign target is 1,500 customers.

⁹ Budget includes both funds for services targeted at both residential and commercial customers.

Offering	Rebate Level	2017 Budget	Target Market	Projected Uptake
Energy Alerts	No-cost to customer	No incentive budget	Small and medium business customers	5% of small and medium business customers with an account on pge.com
Small and Medium Business Offerings-Existing				
Automated Demand Response	\$200/kW	\$400,000	Small and medium business customers	To be determined
Business Energy Checkup	No-cost to customer	No incentive budget, \$250,000 budget to market	Small and medium business customers	4,000 customers in 2016
Energy Management Systems Assessment	No-cost to customer	Emerging Technologies assessment. No incentive budget.	Small and medium business customers	10 customer site trial
Enhanced Event In-Season Support Assessment	No Cost to customer	Emerging Technologies assessment. No incentive budget.	Small and medium business customers, Peak Day Pricing customers	Approximately 20,000 expected for 2017
On-Bill Financing Alternative Pathway	N/A	\$10 million ¹⁰	Small and medium business customers	50 projects
Share My Data	Free to customer	\$2.3 million ¹¹	Small and medium business customers	Approximately 1 million SAIDs ¹²

¹⁰ Total incremental budget added to On-Bill Financing program for 2017, including both On-bill Financing loans and On-bill Financing Alternative Pathway loans.

¹¹ Budget includes both funds for services targeted at both residential and commercial customers.

¹² Total projected SAIDs using Share My Data for data delivery. This includes CCAs leveraging Share My Data.

<i>Offering</i>	<i>Rebate Level</i>	<i>2017 Budget</i>	<i>Target Market</i>	<i>Projected Uptake</i>
Stream My Data	Free to customer	\$256,000 ¹³	Small and medium business customers	Approximately 5,000 users

¹³ Budget includes both funds for services targeted at both residential and commercial customers.

Attachment F

Evaluation, Measurement and Verification Considerations for AB 793

Energy Efficiency Ex Ante and Ex Post Evaluation Considerations

PG&E will design programs, and associated evaluations, to maximize understanding and minimize uncertainty around the impacts of energy management technologies. PG&E will design evaluations to improve the reliability of EE savings estimates (“early EM&V”), and to gain insight into the customer experience and persistence of any savings effects as needed. Evaluations will monitor PG&E’s program offerings to maximize insight into the program effects and to support timely optimization of the program design.

PG&E will adopt an experimental design for trials where it is feasible to create a reliable control group – for example, when a program is an opt-out design. In cases where a control group is not possible or is cost-prohibitive, PG&E will adopt a quasi-experimental approach in order to create as reliable a comparison group as possible – for example, utilizing propensity-score matching or a variance-in-adoption (VIA) approach where a program relies on customers opting-in.

Demand Response Evaluation Considerations

To evaluate DR impacts, PG&E will estimate the EMT load reduction and energy savings in the annual load impact evaluation of the respective DR programs. To the extent feasible, the impact evaluations will also estimate the incremental load shift and energy savings of participants in DR EMT programs. Our ability to precisely quantify the incremental DR impacts attributable to EMT measures will largely depend on the availability of an adequate control group, which informs how the rebate participants would have behaved without the EMT. Given this technical constraint, PG&E will strive to estimate the incremental DR impacts with a control group using the best methodology available.

The impact evaluations for a program year are available on April 1st of the following year. PG&E proposes to summarize the DR load reduction and energy savings of these rebate participants in the annual reporting of AB 793 accomplishments. As such, the load reduction and energy savings of DR programs of AB 793 participants for program year 2017 would be included in the DR Annual Report available in 2018. Note that a DR application for 2018 and beyond has not been filed. Subject to budget approval, the report of 2018 DR performance of the rebate participants will be provided in 2019.

Energy Efficiency and Demand Response Savings Attribution

PG&E believes that if the savings attribution issues between energy efficiency and demand response measures would not be significant. Consider the following situations:

1. In the case where the energy efficiency offering(s) are adopted well before a DR event is called, there will be sufficient data for PG&E to estimate the baseline (i.e., the reference load), with the energy efficiency effect embedded. When the

energy efficiency effect is in both the reference load and the event day load, the DR load impact (defined as the difference between the event day load and the reference load) will net out the energy efficiency effect. The same applies to the calculation of energy savings of the DR events.

2. In the case where a DR event is called shortly after an energy efficiency offering is adopted, PG&E asserts that the data can still reflect accurately estimated energy efficiency attribution for the following reasons.

When the energy efficiency effect is in the DR event day load but not in the reference load, the load impact and energy savings of the participant for the first DR event may be somewhat biased. Given that event-based DR does not provide permanent, substantive energy savings, the bias in the savings estimate of the rebate participant for this DR event is likely to be insignificant relative to the overall energy savings of the energy efficiency offerings. In addition, the bias will diminish over time; for subsequent DR events, more load data will become available after the energy efficiency measure installation date which will allow PG&E to more accurately estimate the reference load with energy efficiency effects embedded. Eventually, the energy efficiency effect is in the reference load and the DR event day load. Like the case above, the DR load impact can completely net out the energy efficiency effect from the savings estimate.

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

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CPUC	Green Charge Networks	Seattle City Light
California Cotton Ginners & Growers Assn	Green Power Institute	Sempra Energy (Socal Gas)
California Energy Commission	Hanna & Morton	Sempra Utilities
California Public Utilities Commission	International Power Technology	SoCalGas
California State Association of Counties	Intestate Gas Services, Inc.	Southern California Edison Company
Calpine	Kelly Group	Spark Energy
Casner, Steve	Ken Bohn Consulting	Sun Light & Power
Cenergy Power	Leviton Manufacturing Co., Inc.	Sunshine Design
Center for Biological Diversity	Linde	Tecogen, Inc.
City of Palo Alto	Los Angeles County Integrated Waste Management Task Force	TerraVerde Renewable Partners, LLC
City of San Jose	Los Angeles Dept of Water & Power	Tiger Natural Gas, Inc.
Clean Power	MRW & Associates	TransCanada
Clean Power Research	Manatt Phelps Phillips	Troutman Sanders LLP
Coast Economic Consulting	Marin Energy Authority	Utility Cost Management
Commercial Energy	McKenna Long & Aldridge LLP	Utility Power Solutions
Cool Earth Solar, Inc.	McKenzie & Associates	Utility Specialists
County of Tehama - Department of Public Works	Modesto Irrigation District	Verizon
Crossborder Energy	Morgan Stanley	Water and Energy Consulting
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Dept of General Services	ORA	