

August 1, 2016

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

Public Utilities Commission of the State of California

**Subject: 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 or CPUC) approval of its proposed Assembly Bill (AB) 793<sup>1</sup> 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.<sup>2</sup> 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."<sup>3</sup> 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.

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<sup>1</sup> Chapter 589, Statutes of 2015.

<sup>2</sup> 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.

<sup>3</sup> *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).

## 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: Joint IOU Marketing Plan and 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."<sup>4</sup> 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 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

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<sup>4</sup> California Long Term Energy Efficiency Strategic Plan, January 2011 Update, p. 11.

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.

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

#### 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”<sup>5</sup> 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 filing<sup>6</sup> 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.<sup>7</sup>

## **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.

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<sup>5</sup> D.16-06-029, pp. 46-47.

<sup>6</sup> 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.

<sup>7</sup> 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,<sup>8</sup> 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 the Joint IOU marketing initiatives, and PG&E's Local Market Facilitation Plan in support of AB 793 implementation.

### *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.

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<sup>8</sup> 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.<sup>9</sup> 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.

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<sup>9</sup> 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**

The IOUs' Joint AB793 Marketing Plan consists of two components: a Joint IOU AB 793 Marketing Plan (Joint Plan) and PG&E's Local Market Facilitation Plan (Local Plan) intended to move customers through their energy management journey towards adoption of EMTs. 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 AB793 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. The Joint IOU Marketing Plan and PG&E's Local Market Facilitation Plan are 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 22, 2016, which is 21 days<sup>10</sup> after the date of this filing. Protests must be submitted to:

CPUC Energy Division  
ED Tariff Unit  
505 Van Ness Avenue, 4<sup>th</sup> 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

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<sup>10</sup> The 20-day protest period concludes on a weekend, therefore, PG&E is moving this date to the following business day.

c/o Megan Lawson  
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 August 31, 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

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: Joint IOU AB 793 Marketing Plan & 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: Yvonne Yang

Phone #: (415) 973-2094

E-mail: Qxy1@pge.com and PGETariffs@pge.com

EXPLANATION OF UTILITY TYPE

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

(Date Filed/ Received Stamp by CPUC)

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

**Tier: 2**

Subject of AL: **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 #: \_\_\_\_\_

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: **August 31, 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 days<sup>1</sup> 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., 4<sup>th</sup> 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**

<sup>1</sup> The 20-day protest period concludes on a weekend, therefore, PG&E is moving this date to the following business day.

**Attachment A**

**Existing AB 793 Offerings**



## **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](http://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](http://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](http://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](http://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](http://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](http://www.pge.com/streammydata)

**Attachment B**

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

## **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**

<b>Automated Demand Response Program - Residential</b>	
<b>Short Description of Offering</b>	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.
<b>Program Partners</b>	Vendors that provide ADR certified technologies. For a list of ADR certified technologies, please visit <a href="http://www.openadr.org">www.openadr.org</a>
<b>Market Sector</b>	Residential
<b>Primary Intervention Strategy</b>	Downstream incentive to customer
<b>Offering Category</b>	Deemed approach – Software and Hardware
<b>Implementation Timeline</b>	January 1 <sup>st</sup> to December 31 <sup>st</sup> , 2017 (PG&E has current budget authorization for DR programs beyond December 31 <sup>st</sup> , 2017, pursuant to D.16-06-029)
<b>Product Delivery and Coordination</b>	Demand Response
<b>Proposed Incentive Level and Justification</b>	Deemed approach - \$ rebate based on the type of DR measure, up to 100% of the measure cost, and 100% upfront incentive.
<b>Product Qualification Requirements</b>	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.
<b>Target Customers</b>	The ADR Program is open to all Residential Customers who: <ul style="list-style-type: none"> <li>• Receive electric services from PG&amp;E.</li> <li>• Either already enrolled in qualifying DR programs (Smart Rate or SSP) or eligible to enroll.</li> </ul>

<b>Automated Demand Response Program - Residential</b>	
<b>Product Goals and Objectives</b>	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
<b>High Level Evaluation Plan</b>	The statewide Auto DR team will work with Demand Response Measurement and Evaluation Committee to determine if an Evaluation Plan is needed in 2017.
<b>Proposed Evaluation Metrics</b>	Number of applications receive, number of customers enrolled, and number of MW enrolled in the program
<b>Proposed Budget</b>	\$400,000 (from the existing 2017 residential ADR Program budget)

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

<b>Smart Thermostat Incentive</b>	
<b>Short Description of Offering</b>	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.
<b>Program Partners</b>	Vendors that qualify for participation include, but are not limited to: Nest, Ecobee
<b>Market Sector</b>	Residential
<b>Primary Intervention Strategy</b>	Downstream Incentive
<b>Offering Category</b>	Hardware
<b>Implementation Timeline</b>	Launch January 1, 2017
<b>Product Delivery and Coordination</b>	The smart thermostat incentive will be offered through the Residential Plug-Load and Appliances.
<b>Proposed Incentive Level and Justification</b>	PG&E will offer a \$50 rebate to offset the cost of purchasing a smart thermostat.
<b>Target Customers</b>	Residential customers with air conditioning
<b>Product Goals and Objectives</b>	Thermostat categorized as smart (enabled machine learning algorithm) and connected (with ability to communicate) with geo-fencing and occupancy sensing capabilities.
<b>High Level Evaluation Plan</b>	<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&amp;E will apply the statewide smart thermostat workpaper to claim ex ante savings, if there is an approved workpaper at time of launch. PG&amp;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&amp;E will propose to</p>

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



<b>Time of Use (TOU) Management App</b>	
<b>Short Description of Offering</b>	<p>PG&amp;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&amp;E is offering Bidgely's HomeBeat SmartPhone App to a target group of customers involved in PG&amp;E's Opt-in Time of Use pilot.</p> <p><u>Key values of HomeBeat App:</u></p> <ul style="list-style-type: none"> <li>• Help study participants perform better on TOU rates through an intuitive and modern smartphone App and TOU Widget</li> <li>• 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</li> <li>• 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</li> <li>• Motivates pilot participants to take control of their energy and shift peak energy usage.</li> <li>• 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</li> <li>• Informs consumers if they are on or off Peak.</li> <li>• Helps study participants plan their day with a TOU day snapshot</li> </ul> <p>Additionally, PG&amp;E Customers need to authorize access to their data via PG&amp;E's Share My Data platform for the Bidgely HomeBeat App to function.</p>
<b>Program Partners</b>	Bidgely
<b>Market Sector</b>	Residential
<b>Primary Intervention Strategy</b>	Midstream
<b>Offering Category</b>	Software
<b>Implementation Timeline</b>	Soft Launch June 2016 & Full Launch - July 2016

<b>Product Delivery and Coordination</b>	Pricing Products
<b>Proposed Incentive Level and Justification</b>	Free to Customers
<b>Target Customers</b>	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.
<b>Product Goals and Objectives</b>	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.
<b>High Level Evaluation Plan</b>	Randomized Encouragement Design (RED)
<b>Proposed Evaluation Metrics</b>	<ul style="list-style-type: none"> <li>• Acceptance rate i.e. Number of downloads, number of registrations, number of email clicks, frequency of visit, Time spent on the App etc.</li> <li>• Interest in and satisfaction with the app</li> <li>• Load Impacts (only if acceptance rates are high enough to have a large enough sample for load impacts)</li> </ul>
<b>Proposed Budget</b>	<ul style="list-style-type: none"> <li>• Implementation = \$500,000</li> <li>• Research and Evaluation = \$75,000</li> </ul>

<b>WeatherBug Smart Thermostat Assessment</b>	
<b>Short Description of Offering</b>	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.
<b>Program Partners</b>	VEIC, WeatherBug Home
<b>Market Sector</b>	Residential
<b>Primary Intervention Strategy</b>	Midstream
<b>Offering Category</b>	Software
<b>Implementation Timeline</b>	Launch November 2016
<b>Product Delivery and Coordination</b>	Energy Efficiency Emerging Technologies Project
<b>Proposed Incentive Level and Justification</b>	Service Free to Customers
<b>Target Customers</b>	Customers with Existing Smart Thermostats
<b>Product Goals and Objectives</b>	Proof of concept for the combination of intervention strategies
<b>High Level Evaluation Plan</b>	<p>PG&amp;E proposes the following strategies to evaluate the thermostat optimization project:</p> <ul style="list-style-type: none"> <li>• Randomized Encouragement Design</li> <li>• Savings determined through billing analysis</li> <li>• Goal is to reach a treatment group size of 3,000</li> <li>• Optimization Algorithm will run for 12 months</li> <li>• M&amp;V provided by separate consultant, quick bid planned for August</li> </ul>
<b>Proposed Evaluation Metrics</b>	<ul style="list-style-type: none"> <li>• Opt-In rate</li> <li>• Opt-Out Rate</li> <li>• Estimated Savings Results</li> <li>• Customer Satisfaction</li> </ul>
<b>Proposed Budget</b>	\$350,000 (Emerging Technologies)

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

<b>Bill Forecasts – Commercial</b>	
<b>Short Description of Offering</b>	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.
<b>Program Partners</b>	FirstFuel, Genability
<b>Market Sector</b>	Commercial
<b>Primary Intervention Strategy</b>	Self-service tool available through My Account on pge.com
<b>Offering Category</b>	Software
<b>Implementation Timeline</b>	The product will be launched before Jan 1, 2017
<b>Product Delivery and Coordination</b>	Bill Forecast is available to all SMB customers with an account on pge.com.
<b>Proposed Incentive Level and Justification</b>	Free-to-end-user service
<b>Target Customers</b>	Small and medium business customers
<b>Product Goals and Objectives</b>	Help SMB customers better understand and manage their energy usage.
<b>High Level Evaluation Plan</b>	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.
<b>Proposed Evaluation Metrics</b>	Number of unique customer page-views
<b>Proposed Budget</b>	Product delivery through broader My Account non-residential solution funds.

<b>Energy Alerts - Commercial</b>	
<b>Short Description of Offering</b>	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.
<b>Program Partners</b>	FirstFuel, Genability
<b>Market Sector</b>	Commercial
<b>Primary Intervention Strategy</b>	Free email, text, or phone messages direct to customer.
<b>Offering Category</b>	Software
<b>Implementation Timeline</b>	The product will be launched before Jan 1, 2017
<b>Product Delivery and Coordination</b>	Energy Alerts are available to all SMB customers with an account on pge.com.
<b>Proposed Incentive Level and Justification</b>	Free-to-end-user service
<b>Target Customers</b>	Small and medium business customers
<b>Product Goals and Objectives</b>	Help SMB customers better understand and manage their energy usage.
<b>High Level Evaluation Plan</b>	This offering is evaluated as part of the suite of offerings PG&E provides to help customers better manage their energy bills.
<b>Proposed Evaluation Metrics</b>	Number of customer sign-ups
<b>Proposed Budget</b>	Product delivery through broader My Account non-residential solution funds.

**Attachment C**

**AB 793 Energy Management Technology  
Offerings In Development for 2017**

## 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:**

**Joint IOU AB 793 Marketing  
Plan & PG&E's Local  
Market Facilitation Plan**

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# **Joint IOU AB793 Marketing Plan**

## **I. Executive Summary**

The Joint IOU Marketing Plan is collaborative effort providing a robust two-year marketing plan for energy management technologies (EMT) with local strategies to be deployed. Target market segments within residential, small to medium business and low-income customers have been identified and will be further examined at a local level. Each IOU's proposed EMT marketing activities will be coordinated and integrated into existing statewide marketing programs.

The Joint IOU Marketing Plan's successful vision is to incorporate all the mentioned elements and to properly assess the effectiveness of the strategies and tactics. The Joint IOU Plan thus broadly defines the necessary metrics to evaluate the AB793 marketing plan that spans September 2016 through December 2018.

Lastly, in addition to the Joint IOU Marketing Plan, each IOU is including a local outreach plan with specific strategies to be used within their territory to promote their specific AB793 offerings. Geographical, customer base differences, and varied AB793 product roadmap variances between the IOU territories required that local strategies also being included and represent a key component to the implementation of the overall intent of the AB 793 directives.

## **II. Background**

On October 8, 2015 the Legislature enacted Assembly Bill (AB) 793 which amended Section 2790 and added Section 717. The amended bill authorizes weatherization to include EMT and directs the Commission to require California's IOUs to develop programs no later than January 1, 2017 that would provide incentives to residential , small or medium commercial customers so that they may acquire EMT for use in their home or place of business. In addition, and to assist in achieving the goal of integration of EMT into electric and gas corporations energy-efficiency portfolios, the Bill directs the electric and gas corporations to have a plan developed by September 30, 2016 that would educate residential customers and small or medium business customers about the incentive program developed.

On June 10, 2016 Joint Administrative Law Judge's (ALJ) issued a Ruling providing guidance on compliance with AB 793 activities for the IOUs and established the

necessary framework for addressing AB 793 implementation. In addition, the ALJ Ruling directed the IOUs to include in their filings a Joint IOU Marketing Plan which would describe two-year plan for promoting EMT that includes goals and objectives, target market segments, partnerships, integration with other marketing efforts, and metrics.

Commission staff and the IOUs have met regularly since AB 793 was signed to review strategies for the marketing plan and the incentive program components. Commission staff has provided informal feedback and direction to the IOUs on their initial ideas for implementation and on the marketing plan to educate customers as directed by AB 793. Based on this input and ongoing IOU collaboration this plan has been developed to incorporate both the intent of AB 793 and the objectives of the ALJ Ruling.

#### **A. Evolving Energy Management Technology Industry**

Ongoing technology trends, including decreased sensor, computation, and display costs, more pervasive integration of device-level information processing capability and networking/communications, an increased interest in electric demand response, and the roll-out of smart utility meters have greatly increased the opportunities for home energy management and enhanced their potential viability. To exploit those opportunities, a growing number of new EMT products and companies have emerged over the past decade, ranging from basic energy displays to whole home control systems and smart phone apps. The great diversity of EMT product features and types is indicative of the emerging state of the EMT industry that currently has relatively low market penetration. For example, Greentech Media (2011) estimated that approximately 6 million U.S. households will have some type of EMT device by 2015; this equals about 5 percent of households.

Some EMT products strive to increase communication between the utility and the consumer. The directionality and sophistication of such communication, however, still varies among products. Many products that seek to provide feedback on electricity and gas consumption send information to the consumer only. The growing trend, rather, is to develop two-way EMT products that can connect to a home network and control

different devices in the home; such is the case with current home automation and demand response (DR) efforts.

For any EMT products to achieve mass-market penetration, the industry must overcome challenges to enable consumers to easily purchase, install, use, and secure these EMT solutions. These challenges are further described below.

## **B. Market Barriers to Energy Management Technology**

EMT, though widely available, appears to be a yet nascent category for the average customer. Few believe it has a prominent role in their lives today but expect it to become increasingly evident in the future. A survey led by Harris Poll® in 2015\*, cited 78% of Americans expect newly built homes to include smart home technology within the next five years. Yet, several reasons provide barriers for customer adoption.

First, part of the low adoption and interest may be due to consumers' limited understanding of smart home technology. While knowledge in the U.S. about the latest smartphone and computer technology is relatively high, The Harris Poll® found that nearly two-thirds of consumers don't know much about smart home technology. Additionally, there appears to be a disconnect in the semantics of smart home technology. Nielson's Connected Life Report (a 2015 bi-annual study of consumer needs, preferences, attitudes, and behaviors around new and emerging technologies related to connected cars, homes, and wearables) found that 7% of Americans own a smart home technology. However, when presented with specific list of smart home category devices, nearly 5 times as many (34%) indicated they have at least one in their home.

Second, price remains a pivotal factor in driving adoption of energy-related related programs and services and are considered a nice-to-have. The Harris Poll® notes 88% of Americans believe these devices are too expensive. And when probed on when they will be likely to consider purchasing such technology, 37% say they will consider purchasing when the price drops to a reasonable amount. Notably, two in ten (21%) Americans are not sure at what point they would consider purchasing this kind of technology – further signaling confusion in this still-new market segment.



Additionally, seven in ten Americans believe smart home technology makes it easier to steal personal information/data (71%) and wonder whether smart home devices will perform basic functions as well as their traditional counterparts do (70%).<sup>1</sup>

For some customers, the technology is not seamless. About 9% will wait until the “bugs” have been worked out.\* Customers have come to expect ease-of-use and quality through their smartphones. With smarthome devices struggling to replicate that sense of simplicity and a lack of standardization, gadgets of different manufacturers cannot communicate with each other. The smartphone, the link between the customer and smarthome device, has raised consumers’ expectations, explains Jamie Siminoff, the boss of Ring, a startup that makes a doorbell that can be answered remotely.

Regardless of the barriers, a majority of Americans recognize the benefits for homeowners in smart home technology, with over six in ten (61%) saying household devices that can connect to the Internet are good for homeowners. Vast majorities of adults feel it’s important that smart home technology saves money (91%), conserves energy (90%), helps keep them and/or their family safe (89%), and protects property from theft/vandalism (88%).<sup>2</sup>

### **III. Joint IOU Marketing Plan**

#### **A. Energy Management Technology Defined**

To properly devise a well thought out Marketing Plan for this new innovative technology, it is essential that it be properly defined with details on the how the product benefits can improve energy-efficiency for customers.

For the purposes of this plan, EMT is defined as a software, product or service provided to the consumer that helps them to manage and control their energy use. It provides the consumer the ability to closely track their electric, water or gas use at specific times of the day or night; it educates the consumer on how their home or building uses various forms of energy; allows them to make more informed choices on when they should use or curtail use of certain products, appliances and/or equipment;

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<sup>1</sup> Alllyssa Birth. *The Hariss Poll #53*. September 10, 2015.

<sup>2</sup> *I.d.*

and gives the customer remote access to control certain products or equipment while they are away from their home or facility.

## **B. Overarching Approach**

The IOUs Joint AB793 Marketing, Education & Outreach plan consists of two components including a Joint IOU plan and an individualized local IOU plan set to begin September 2016 and continue through the end of 2018. The Joint IOU plan aligns the IOUs with common metrics, goals, customer segments, and coordination with marketing efforts of the Energy Upgrade California Statewide campaign. The IOUs will build upon awareness provided by the Energy Upgrade California Statewide campaign on what EMT is and why it should matter to Californians. The local IOU plans will utilize a multi-touch, multi-channel strategy to promote adoption of EMT's and incentives available to customers based each IOUs roadmap of AB793 offerings. The individual plans include below illustrate how each IOU will utilize strategies and tactics specific to the characteristics of their customer base and demonstrate how they will engage customers and move them through their energy management journey by increasing their awareness and ultimately their adoption of EMT.

## **C. Marketing Goals and Objectives**

The overarching marketing goal for AB 793 is to deliver an optimized, consistent and compelling marketing plan that focuses on increasing awareness and understanding of EMTs. The plan will be utilized to foster engagement and encouraging consideration and adoption through a comprehensive and integrated approach among key target market segments.

The first primary objective to be achieved will be to generate awareness and customer understanding of EMTs and its benefits. With this objective, the Joint IOUs will create visibility of the various technologies available in the market and better understanding on the financial and environmental benefits they contain in regards to energy usage. The awareness of various EMT and the associated benefits will help to ensure there is enough visibility to encourage significant lead generation for the adoption of EMT.

The second, objective will be to foster customer engagement and piquing interest by communicating benefits of energy management technology. This objective will essentially strengthen the investment customers intend to make concerning EMT by providing additional knowledge and building connections that will flourish into a persistent and ongoing interest in future EMT offerings or improvements.

The Final objectives will formulate connecting information to action and drive adoption of EMT and utilization of incentives as a means to change energy use behavior.

#### **D. Target Market Segments**

AB793 directs California IOUs to incentivize and expand their portfolio of EMT and to educate both residential and small/medium business customers about available offers and incentives for new and existing products, services and software.<sup>3</sup> Within those broader customer categories, low-income customers should also be targeted through participation in the home weatherization program.

An important part of the targeting strategy will be to identify those customers who are more inclined to adopt technology in general, but also to make these offerings more accessible and reduce possible barriers for less tech-savvy customers. The IOUs will rely on their customer segmentation models, additional customer data that is available, as well as leverage any relevant primary and secondary research findings, to help focus efforts and resources on the best targets within each group. For example, initial targeting may rely on specific demographic characteristics like single-family homeowners with higher energy use, warmer inland climate zones, customers who are more likely to have Wi-Fi or central air conditioning, and have an interest in technology. As the campaign expands and evolves, we will target increasingly broader subsets of customers (as resources permit).

Further, each IOU will take into account the various psychographic factors that may influence a customer's willingness, ability and/or motivations to adopt energy

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<sup>3</sup> AB 793, Section. 717

management technology. A 2016 study by the Smart Grid Consumer Collaborative's (SGCC) Empowered Consumer Report noted consumer awareness of and interest in smart grid-enabled services and technologies are better aligned with customer segmentation (social and lifestyle characteristics) which suggests that overall awareness and interest depends, at least in part, on the personal characteristics and motivations of customers.

### **1. Residential – General Population & Low Income**

As technology continues to change and evolve, the personalized characteristics of customer segments will remain at the core of their preferences and behaviors toward our EMT offers. In today's world where customization is commonplace, customers are increasingly looking to their utility provider to offer solutions unique to their needs. Understanding that today's customers evaluate products, services, and software through a lens that blends their unique perspective on technology with their experience, ease of use, and perceived cost, further debunks the idea that one size still fits all.

To borrow an example from industry research, Accenture<sup>4</sup> identified nine consumer characteristics that shape how energy providers address and serve their customers, based on key findings from five years of end-consumer research (2014):

1. **Energy Perspective** – addressing a spectrum of consumer mindsets, from energy literate to agnostic
2. **Omnipresent** – supporting seamless virtual interaction anytime, anywhere
3. **Individualized** – personalizing the energy experience to address unique needs and preferences
4. **Social Centric** – creating a gathering place for ideas, conversations and collaboration
5. **Prosumer** – buying and selling energy via a variety of business partners
6. **Tech Savvy** – providing set-and-forget technologies that deliver financial savings, convenience and individual control

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<sup>4</sup> Accenture. *The New Energy Consumer Architecting for the Future Report*. 2014.

7. **Interconnected** – developing bundled solutions that combine energy with other products and services for the home and business
8. **Pay It Forward** – offering a range of prepaid energy solutions to meet a variety of lifestyle needs
9. **Energy Diverse** – adopting a range of nontraditional energy options, including distributed generation, net metering and microgrids

Using segmentation data allows for a more personalized experience for the customer. This would be implemented through customized messaging and channel integration. What's important to customers is what they value. Providing the right offers to the appropriate customer at the right point in time of their energy management journey and in the right way for the particular customer segment to be most likely to respond, be it through email, direct mail, mobile and/or social media, is key. Additionally, communications can be designed to engage an increasingly diverse customer base with the correct tone and imagery

## **2. Small and Medium Business (SMB) customers**

While energy management is important, making it a priority in the SMB's day-to-day operations is often challenging. Thus, SMBs look to utility companies to provide them with solutions that are most meaningful to them and can adjust to their changing growth. Similar to the residential market, the solutions can be varied for these businesses as their needs differ across industries & levels of energy usage. When dealing with diverse segments, again a one-size solution often does not fit all. Targeted EMT solutions and communications should be developed to address specific concerns and opportunities that are available by business type. Targeted Industry/Sectors may include:

- Retail
- Food Service
- Financial Institutions
- Schools
- Small office spaces
- Small industrial or warehouses

Providing these segments with custom support tools that allow the businesses to be more efficient when managing their energy is the type of value-added service these businesses rely on. Again, for the SMBs, recognizing relevant solutions that apply to their industry type and usage is critical as is understanding that each business operates and makes decisions differently. Similar to residential customers, they also have varying levels of comfort and affinity for EMT solutions, so engaging them through the right channels is important. For some, third-party partners like trade professionals can be a great, cost-effective resource which others may operate independently and require a DIY approach that is easy to use and understand. The diversity of these business segments means providing personalized solutions based on their needs and what they value as well. Using layered marketing to provide the right offers to the right customer at the right time and in the right way will increase value and deepen relationships in business organizations and will strengthen participation in energy savings.

The IOUs will take these residential and SMB segment strategies into consideration and will pursue the possibility of these segments in their own regions as part of their individual marketing plans.

## **E. Integration with Other Marketing Efforts**

### **1. Coordination with Statewide ME&O**

The Statewide ME&O IOU leads will work with other Statewide ME&O stakeholders, such as the Energy Division and the Statewide Implementer of Energy Upgrade California, to recommend that EMT be included as a priority program area for the 2017 and 2018 Annual Joint Consumer Action Plans.

In accordance with the post-2016 Statewide ME&O Decision (D.) 16-03-029, Commission staff will develop a preliminary prioritization of areas to be pursued on an annual basis, and will provide it to stakeholders for comments and suggestions prior to the Statewide Implementer's finalization and filing of the plan as a Tier 1 advice letter<sup>5</sup>.

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<sup>5</sup> D.16-03-029 Decision on Phase 3 issues: Post 2016 Statewide Marketing, Education, and Outreach Activities, p. 67. The decision sets the following process for the Annual Joint Consumer Action Plan: a. Commission staff shall develop a preliminary proposal which prioritizes program areas on an annual basis. b. The preliminary staff proposal will then go to stakeholders for their comments and suggestions. c. The statewide administrator shall revise and finalize the proposal and file the resulting Joint Consumer Action Plan as a Tier 1 Advice Letter. d. The

When the IOUs are asked for feedback on the proposed topics to be covered, Statewide IOU ME&O leads will recommend adding “customer education on EMTs,” if such education is not included in the proposed topic list.

The IOUs will make recommendations to work with Energy Upgrade California to educate customers on the general topic by explaining what EMT is, providing examples of products and services that fall under the EMT umbrella, and demonstrating how EMTs may help customers better understand and manage their energy use. The EUC statewide campaign can also inform customers that EMT incentives are available from energy service providers, and encourage customers to take advantage of those incentives by directing them to providers with available EMT incentives.

Emphasis will be placed on coordination among EMT-related Statewide and local ME&O activities on matters such as consistency in overarching messaging, timing, and, where possible, targeting similar segments. Per the post-2016 Statewide ME&O decision<sup>6</sup>, Energy Upgrade California’s role will be valuable in engaging Californians with topics such as EMT and serving as a lead generator for local and regional EMT programs.

## **2. Coordination with Residential Rate Reform**

D. 15-07-001, issued in 2015, implements reforms to the default tiered structure for residential electricity rates. This decision also includes a process under which time-of-use (TOU) will become the default residential electricity pricing structure in 2019. Time-of-use pricing is a significant departure from the way residential customers are currently charged for electricity, and an extensive education and outreach campaign is

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Commission’s Energy Division will review and approve the Advice Letter. e. Topics that are ranked as a high priority through this process will be the subject of a one-year “Joint Consumer Action Plan” similar to the approach described by CSE in its opening comments: Each “Plan” would include the goals and objectives, target audiences, high level approaches and strategies, metrics, and implementation roles and responsibilities for each strategy.”

<sup>6</sup> D.16-03-029 on Phase 3 issues: All Californians will be engaged as partners in the state’s energy efficiency, demand-side management and clean energy efforts by becoming fully informed of the importance of energy efficiency and their opportunities to act. Statewide marketing, education and outreach should serve as a lead generator for local and regional programs and drive consumers to directly take actions to reduce or manage energy use in other ways.

warranted so that customers “can understand and respond appropriately to their electricity rates”<sup>7</sup>.

In the Decision the IOUs were directed to form an ME&O Working Group and issue a Request for Proposal (RFP) to select a professional services firm to develop an ME&O blueprint. Greenberg, Inc. was selected on March 14, 2016 and work is currently in progress for the ME&O blueprint which is expected to be finalized by August 19, 2016. The IOU’s will then develop specific ME&O plans that align with recommendations in the ME&O blueprint and file in an Advice Letter on or before November 1<sup>st</sup>, 2016.

The working group and Greenberg Inc. conversations have identified the need for a consistent messaging campaign across California to encourage residential customers to change their relationship with energy. At the time of this filing the ME&O blueprint is still in development and it is not yet determined how the statewide message will be aligned and carried out as a part of rate reform. However, the IOUs will coordinate with Residential Rate Reform campaign efforts to ensure that EMTs are represented as one of the solutions are integrated and offered within IOU’s rate reform local plans to help customers mitigate any negative rate change impact.

### **3. Local Plan Integration**

Each of the IOU’s local plans will integrate AB793 EMT programs with other marketing efforts planned for execution during 2017 and 2018. Each IOU will assess its target markets, as well as where its customers are in their energy management journeys, to determine the most appropriate opportunities for integrating EMT. The individual plans below describe the IOUs’ approaches to integrating AB793 in their energy management and marketing programs.

The IOUs will build upon the education and outreach that Energy Upgrade California is undertaking at the statewide level by providing information about specific

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<sup>7</sup> D.15-07-001, p.255.



EMT “products, services and software”<sup>8</sup> from which customers may benefit, and by offering incentives to encourage customers to implement those EMT offerings which will help them better understand and manage their energy use.

## **F. Metrics**

The IOUs will regularly monitor marketing campaigns that are launched to promote customer adoption of their individual AB793 roadmaps and evaluate the performance of those campaigns to drive awareness, adoption and use of EMT to better manage or shift energy usage.

The Joint IOUs plan on utilizing a multiple touch approach to ME&O is the best way to raise awareness and impress the value of energy management technology upon various customer segments. As such, we propose to use a combination of metrics to evaluate our campaign success, derived from both mass/direct marketing and outreach methods. Taking an integrated approach to customer education and engagement (not a “one-size” or “one-tactic fits-all” approach) means using channels and tactics that different target audiences are more inclined to see or hear and respond to and may include tactics such as bill inserts, direct mail, email, community or business outreach, digital media, social media and more.

The Joint IOUs will evaluate campaign success through metrics associated with those activities, which may include click-through, open rates, social media responses, web traffic, marketplace transactions, event participation and third-party/vendor reports. Assessing and evaluating our ME&O strategies and tactics on an on-going basis will allow us to course-correct over the duration of the campaign.

Examples of primary measurement could include the uptake of products in terms of volume of rebates we process as well as the energy savings that result. The Joint IOUs also think about how to measure awareness, trial and purchase of the AB 793 qualifying Energy Management Technology.

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<sup>8</sup> “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.” Assembly Bill No. 793, p. 2.

Secondary measurements could include the depth and breadth of partnerships with manufacturers, retailers and other interested parties. This can be measured by the types of marketing support that we receive from third party service providers, the number of emails we send out, the number of communications that are launched, and the awareness of customers regarding the Program. Another metric is how many links we get from third party service provider websites, and the traffic that these sites bring to our website and landing pages. Other measurements can include the use of our assets, such as testimonials and infographics, by third parties.

# **PG&E's AB793 Local Market Facilitation Plan**

#### **IV. 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.

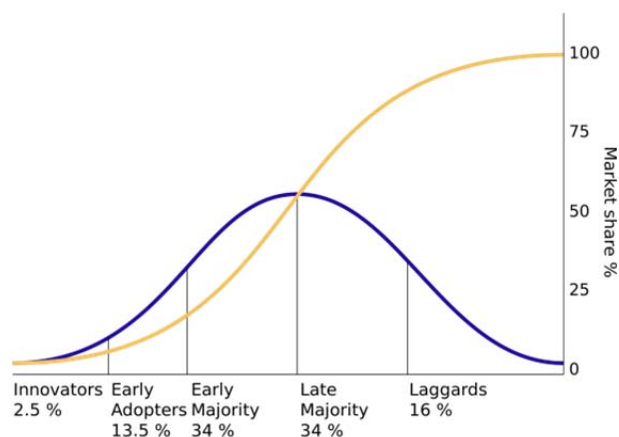
For greater effectiveness, the integrated marketing plan will leverage existing initiatives already underway in 2016 and beyond, coordinate across product portfolios, and align with state level initiatives.

##### **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 Adopters<sup>9</sup>, 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 2020<sup>10</sup>.

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.<sup>11</sup> 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.<sup>12</sup> 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.



<sup>9</sup> Statista (2016) <https://www.statista.com/outlook/279/109/smart-home/united-states#>

<sup>10</sup> Statista (2016) <https://www.statista.com/outlook/279/109/smart-home/united-states#>

<sup>11,4</sup> 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:

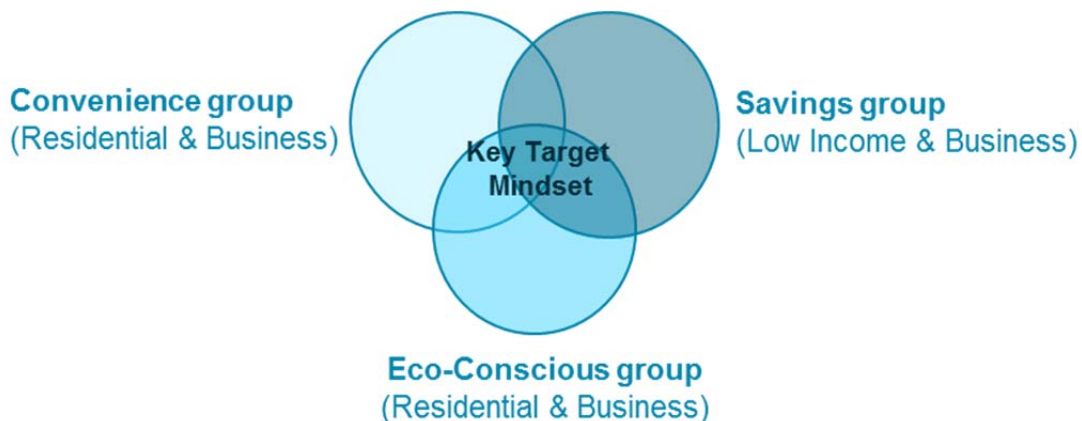


Figure 2. Opportunity for EMT adoption through the lens of customer groups. The highest opportunity lies in the Key Target Mindset, which all groups have in common.

**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 workshop<sup>13</sup>, 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).

<sup>13</sup> CPUC AB793 Workshop on June 24, 2016



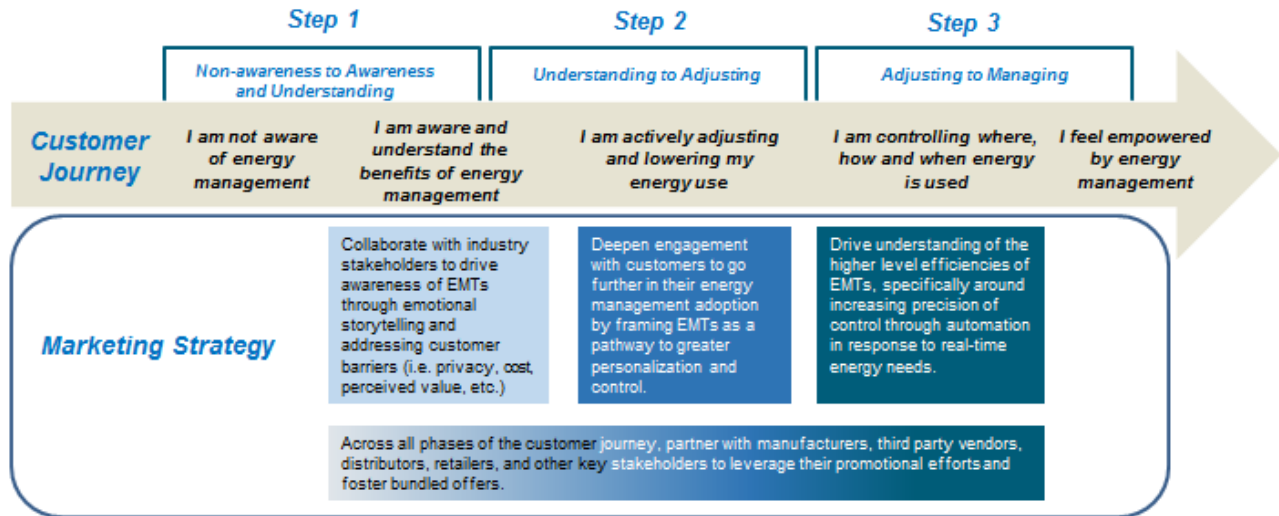


Figure 4. Illustration of customer journey from non-awareness to feeling empowered by energy management.

### 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 unaware<sup>14</sup> 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 indicate<sup>15</sup> that customers' interest in "smart" or "connected" technologies revolves around convenience, comfort, and safety<sup>16</sup> – 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

<sup>14</sup> See Change Institute (July 2017) HEMS Phase II Research.

<sup>15</sup> 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/>

<sup>16</sup> 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 strategies<sup>17</sup> 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

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<sup>17</sup> 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 Marketplace<sup>18</sup> 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,

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<sup>18</sup> PG&E (2016) PG&E Marketplace <https://marketplace.pge.com/>

installers, distributors, retailers and other partnerships. In addition, PG&E will 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.16-06-029<sup>19</sup>). PG&E will evaluate and optimize 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"> <li>▪ Provide customers with bill alerts and self-serve data</li> <li>▪ Offer customers the most beneficial products for their particular needs</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide customers access to a variety of software solutions and devices</li> <li>▪ Next level connected home or business, increasing their</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide customers with energy management platforms and portals including load monitoring</li> <li>▪ Support customers in leveraging advanced</li> </ul>

<sup>19</sup> Decision 16-06-029 – Adopting Bridge Funding for 2017 Demand Response Programs and Activities. 2018 funding pending.

	<ul style="list-style-type: none"> <li>Incentivize customers to participate in easy ways to understand their energy usage and make simple decisions</li> </ul>	<ul style="list-style-type: none"> <li>decision making</li> <li>Incentivize customers to either bring their own devices or invest in more complex systems</li> </ul>	<ul style="list-style-type: none"> <li>metering, connectivity, and energy disaggregation</li> <li>Incentivize customers to leverage utility approved third party solutions on a wide scale</li> </ul>
<b>Residential Offerings</b>	<ul style="list-style-type: none"> <li>Advanced Power Strips</li> <li>Behavioral Demand Response Pilot</li> <li>Bill Forecasts</li> <li>Bring Your Own (BYO) Thermostat Demand Response Pilot</li> <li>Energy Alerts</li> <li>Energy Fitness</li> <li>Home Energy Checkup</li> <li>SmartAC™</li> <li>Share My Data</li> <li>Stream My Data</li> </ul>	<ul style="list-style-type: none"> <li>Auto Demand Response</li> <li>Nest Seasonal Savings Assessment</li> <li>Smart Thermostat Incentive</li> <li>Time-of-Use Management App</li> <li>WeatherBug Smart Thermostat Assessment</li> </ul>	<ul style="list-style-type: none"> <li>Energy Engagement from School Energy Education Programs</li> <li>Product Bundles</li> <li>Residential Mobile App</li> <li>Smart Appliance Incentives</li> <li>Web-based Mobile Application</li> </ul>
<b>Small and Medium Business Offerings</b>	<ul style="list-style-type: none"> <li>Auto Demand Response</li> <li>Business Energy Checkup</li> <li>Energy Management Systems Assessment</li> <li>Enhanced In-Season Support for Peak Day Pricing</li> <li>On-Bill Financing Alternative Pathway</li> <li>Share My Data</li> <li>Stream My Data</li> </ul>	<ul style="list-style-type: none"> <li>Bill Forecasts</li> <li>Energy Alerts</li> </ul>	<ul style="list-style-type: none"> <li>Circuit Level Load Monitoring</li> <li>Commercial Mobile App</li> <li>Energy Management System Pay for Performance</li> <li>Managed Energy Services</li> </ul>
<b>Potential Product Bundles<sup>20</sup></b>	<ul style="list-style-type: none"> <li>Residential SmartAC™ + SmartRate</li> <li>Low Income Weatherization + Stream My Data Connectivity</li> <li>SMB Automated Demand Response + Peak Day Pricing</li> </ul>	<ul style="list-style-type: none"> <li>Potential Residential bundle Customer Driven Weatherization + Nest Seasonal Savings</li> <li>Potential Low Income bundle</li> <li>Customer Driven Weatherization + ESAP Energy Alerts</li> <li>Potential SMB bundle</li> </ul>	<ul style="list-style-type: none"> <li>Potential Residential bundle Web Based Mobile App + Auto Demand Response</li> <li>Potential Low Income bundle</li> <li>Product Bundle + Mobile App</li> <li>Potential SMB bundle</li> <li>Commercial Mobile App + Circuit Level Load</li> </ul>

<sup>20</sup> Potential bundle listed are examples and may change due to timing feasibility and availability of product offerings.



	Enhanced In-Season Support	<ul style="list-style-type: none"> <li>Weatherbug SmartThermostat + Time of Use Management App</li> </ul>	Monitoring
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Figure 5. Table of marketing activity in line with Products roadmap.

## 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.

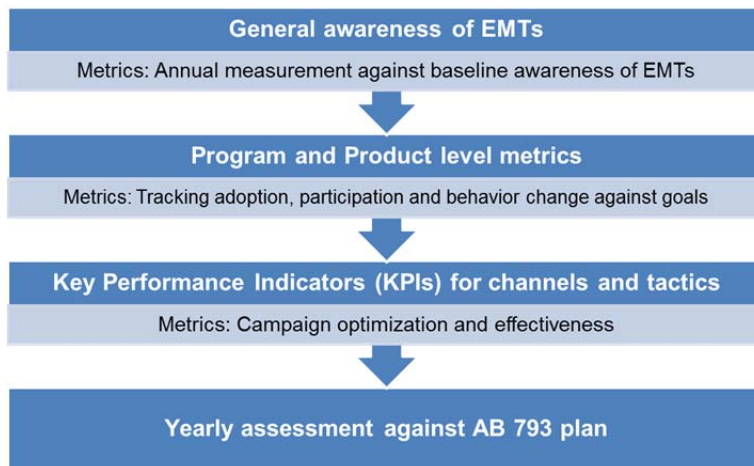


Figure 6. Illustration of marketing metrics.

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

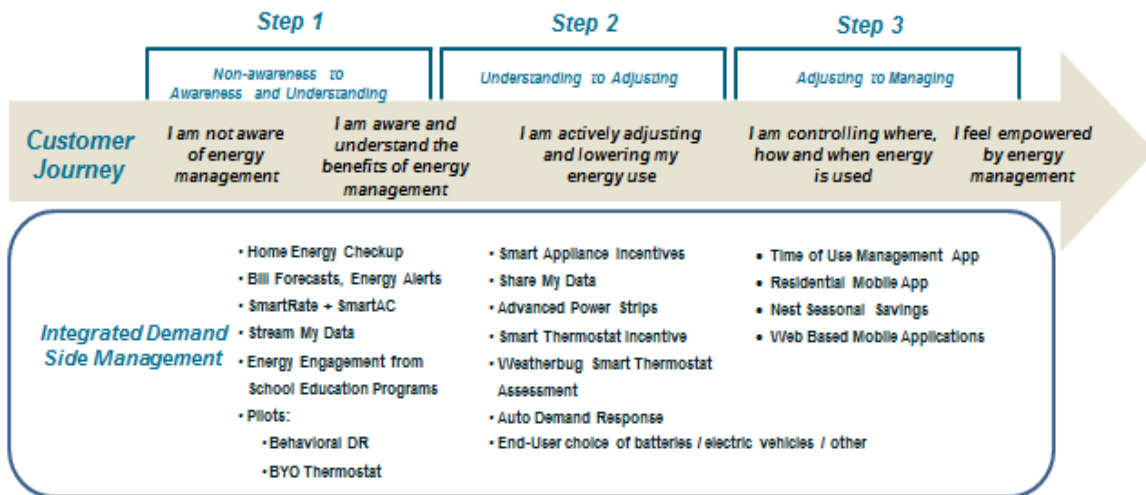
programs, and measuring behavior change (such as through bill decreases and energy saved). On a secondary level, metrics such as opt-ins and unsubscribes will be tracked to understand how customers are adopting and utilizing various EMTs.

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).

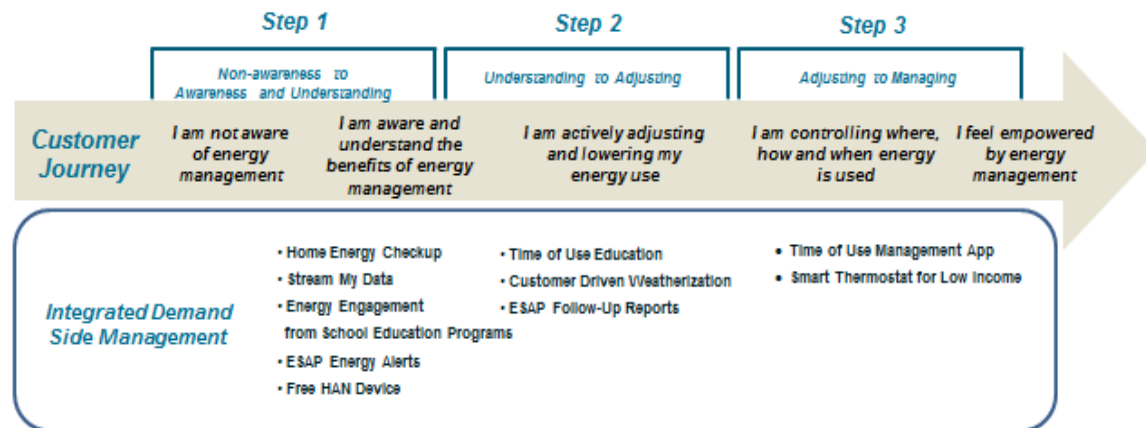
#### **I. Customer Energy Management Journey Maps**

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

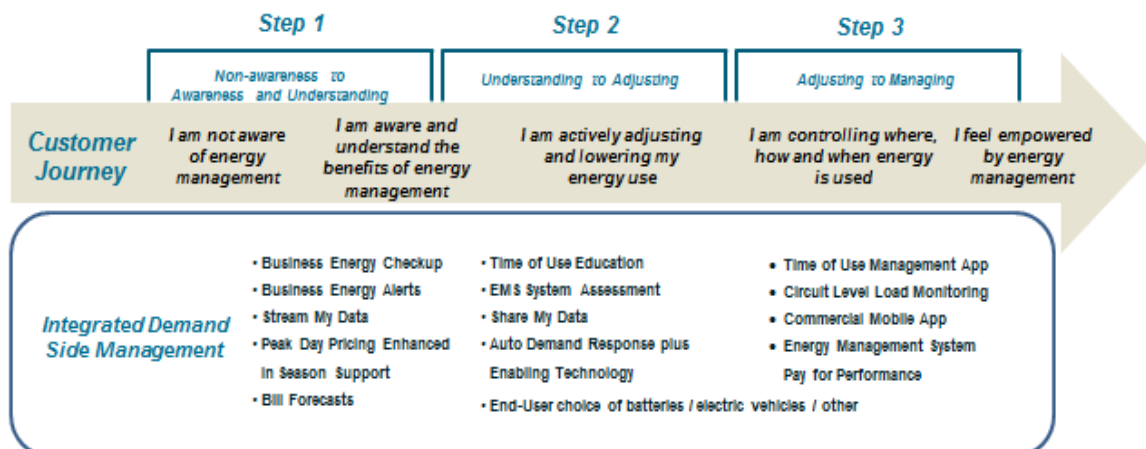


Figure 7. Customer Energy Management Journey Maps

**Attachment E**

**Energy Management Technology Offering Table**

**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.

<b>Offering</b>	<b>Rebate Level</b>	<b>2017 Budget</b>	<b>Target Market</b>	<b>Projected Uptake</b>
<b>Residential Offerings - For Launch by January 1, 2017</b>				
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

<b>Offering</b>	<b>Rebate Level</b>	<b>2017 Budget</b>	<b>Target Market</b>	<b>Projected Uptake</b>
<b>Residential Offerings – Existing</b>				
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 <sup>1</sup>	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 <sup>2</sup>	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 <sup>3</sup>	High energy users	To be determined

<sup>1</sup> Budget for 2016 pilot offering; measure is under review for possible expansion.

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

<b>Offering</b>	<b>Rebate Level</b>	<b>2017 Budget</b>	<b>Target Market</b>	<b>Projected Uptake</b>
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 <sup>4</sup>	Residential customers	Approximately 1 million SAIDs <sup>5</sup>
SmartAC™	\$50 to \$100 <sup>6</sup>	\$8,300,000 <sup>7</sup>	Residential customers with AC	13,500 customers <sup>8</sup>
Stream My Data	No-cost to customer	\$256,000 <sup>9</sup>	Residential customers	Approximately 5,000 users
<b>Small and Medium Business Offerings-For Launch by January 1, 2017</b>				
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

<sup>3</sup> 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.

<sup>4</sup> Budget includes both funds for services targeted at both residential and commercial customers.

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

<sup>6</sup> 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.

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

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

<sup>9</sup> Budget includes both funds for services targeted at both residential and commercial customers.

<b>Offering</b>	<b>Rebate Level</b>	<b>2017 Budget</b>	<b>Target Market</b>	<b>Projected Uptake</b>
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
<b>Small and Medium Business Offerings-Existing</b>				
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 <sup>10</sup>	Small and medium business customers	50 projects
Share My Data	Free to customer	\$2.3 million <sup>11</sup>	Small and medium business customers	Approximately 1 million SAIDs <sup>12</sup>

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

<sup>11</sup> Budget includes both funds for services targeted at both residential and commercial customers.

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



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

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<sup>13</sup> Budget includes both funds for services targeted at both residential and commercial customers.

## **Attachment F**

### **Evaluation, Measurement and Verification Considerations for AB 793**

## Attachment F

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#### 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 1<sup>st</sup> 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  
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