

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking to Enhance the  
Role of Demand Response in Meeting the  
State's Resources Planning Needs and  
Operational Requirements.

Rulemaking 13-09-011  
(Filed September 19, 2013)

**OPENING COMMENTS OF PACIFIC GAS AND ELECTRIC  
COMPANY (U 39E) ON THE PROPOSED DECISION APPROVING  
DEMAND RESPONSE PROGRAM IMPROVEMENTS AND 2015-2016  
BRIDGE FUNDING BUDGET**

SHIRLEY A. WOO  
MARY A. GANDESBERY

Pacific Gas and Electric Company  
77 Beale Street, B30A  
San Francisco, CA 94105  
Telephone: (415) 973-0675  
Facsimile: (415) 973-0516  
E-Mail: MAGQ@pge.com

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Attorneys for  
PACIFIC GAS AND ELECTRIC COMPANY

## TABLE OF CONTENTS

	Page
I. INTRODUCTION AND SUMMARY OF RECOMMENDATIONS .....	1
II. SUMMARY OF PG&E'S RECOMMENDATIONS .....	1
III. DISCUSSION.....	2
A. PG&E's Transmission and Distribution Deferral Pilot Should Continue in 2015-2016. ....	2
B. PG&E's Proposed Changes to the E-DBP Rate Schedule Should Be Approved.....	6
1. PG&E Should Be Authorized to Dispatch a DBP Event at its Discretion. ....	6
2. PG&E Should Be Authorized to Expand the DBP Dispatch Window to 6:00 a.m.–10:00 p.m. ....	8
C. New Reporting Requirements.....	8
1. Weekly Report regarding Program Non-Events .....	9
2. Report regarding Bidding into the CAISO Market.....	10
D. Permanent Load Shifting Program.....	10
E. Marin Clean Energy's Participation In DR Programs. ....	10
F. PG&E's Supply-Side Pilot .....	11
IV. CONCLUSION.....	12
 ATTACHMENT A: PROPOSED REVISIONS TO FINDINGS OF FACT AND CONCLUSIONS OF LAW .....	 A-1
ATTACHMENT B: ADVICE 4-88 AND DISPOSITION LETTER.....	B-1

**TABLE OF AUTHORITIES**

**Page(s)**

**CALIFORNIA PUBLIC UTILITIES COMMISSION DECISIONS AND ORDERS**

D.06-11-049, *Order Adopting Changes To 2007 Utility Demand Response Programs*  
(Dec. 1, 2006) ..... 7

D.09-08-027, *Decision Adopting Demand Response Activities And Budgets*  
*For 2009 Through 2011* (Aug. 24, 2009) ..... 5

D.12-04-045, *Decision Adopting Demand Response Activities And Budgets*  
*For 2012 Through 2014* (Apr. 30, 2012)..... 3

*Assigned Commissioner And Administrative Law Judge's Ruling Providing Guidance For*  
*Submitting Demand Response Program Proposals, R.13-09-011* (Jan. 31, 2014)..... 7, 8

**CPUC RULES OF PRACTICE AND PROCEDURE**

Rule 14.3 ..... 1

Rule 14.3 (b) ..... 2

Rule 14.3 (c)..... 2

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Pacific Gas and Electric Company (PG&E) comments on the proposed decision of Administrative Law Judge (ALJ) Hymes dated April 15, 2014 pursuant to Rule 14.3 of the California Public Utilities Commission's (Commission's) Rules of Practice and Procedure.

**I. INTRODUCTION AND SUMMARY OF RECOMMENDATIONS**

PG&E thanks ALJ Hymes for her efforts in distilling the parties' proposals into a timely Proposed Decision (PD) which would approve a budget for PG&E's 2015-2016 demand response (DR) portfolio. The PD takes positive steps towards retaining the investor-owned utilities' (IOUs') DR programs in 2015-2016 and supports the statewide effort to utilize DR as a preferred resource as set forth in the key actions in the Energy Action Plan II. The PD provides most of PG&E's requested budget and approves some of PG&E's program changes that will improve the performance of existing programs during the bridge years.

The PD reaches the correct conclusions on most issues and PG&E supports it. However, PG&E requests the PD to be revised to address the following requests:

**II. SUMMARY OF PG&E'S RECOMMENDATIONS**

A. *Transmission and Distribution Deferral Pilot*: PG&E's Transmission and Distribution (T&D) Deferral Pilot should continue in 2015-2016 to allow PG&E to test using demand-side management programs to improve local grid reliability and defer T&D upgrades.

The pilot would also address how demand-side management programs can be included in long-term planning.

B. *Demand Bidding Program (DBP) Improvements:* PG&E's proposed changes to the DBP Rate Schedule should be approved as they would improve PG&E's ability to use the program and provide additional flexibility for customers who elect to participate in program events.

C. *Clarification of Reporting Requirements:* PG&E supports reporting requirements that would provide greater transparency regarding its dispatch and bidding of DR programs. PG&E requests changes in the schedules for the new reporting requirements to allow sufficient time to develop the format for these reports.

D. *Permanent Load Shifting:* The PD appropriately rejects the proposals of the California Energy Storage Alliance (CESA) to increase statewide permanent load shifting (PLS) incentives and to approve a multi-year program budget that exceeds the bridge period.

E. *PG&E's Supply-Side Pilot:* PG&E appreciates that the PD would approve this pilot. PG&E requests a revision to an ordering paragraph that appears to reject the pilot.

These recommendations are discussed in detail below. PG&E's proposed changes to the findings of fact, conclusions of law, and ordering paragraphs as required by Rule 14.3 (b) and (c), are included in Attachment A.

### **III. DISCUSSION**

#### **A. PG&E's Transmission and Distribution Deferral Pilot Should Continue in 2015-2016.**

The PD would deny PG&E's request to continue its current T&D pilot as insufficiently supported. (PD, p. 29.) PG&E respectfully requests the PD to be revised to allow it to continue this valuable pilot in 2015-2016, given the Commission's desire to use DR to increase grid reliability, and authorize \$1,622,500 to support the T&D pilot. The Rulemaking highlights the importance of evaluating using DR to increase local reliability. One of the issues included in the scope of the proceeding is:

4. What mechanisms shall the Commission develop such that local and system reliability needs forecasted by resource planners drive the development and procurement of demand response programs?<sup>1/</sup>

The T&D pilot, if authorized, would provide concrete data to determine whether and to what extent PG&E's demand-side management programs can be used to target specific areas flagged by system planners to defer T&D upgrades. The pilot would also demonstrate the efficacy of integrating demand-side management programs in system planning.

PG&E proposed to continue the pilot in its March 3, 2014 Demand Response Program Proposals for 2015 and 2016 (PG&E Proposal), and attached a detailed five-page pilot proposal to its filing. (PG&E Proposal, Attachment D.) The PD includes a cursory denial of the pilot, as unreasonable and insufficiently explained. (PD, p. 29.) The PD does not explain or discuss the details in PG&E's Proposal and in Attachment D or state why PG&E's request is unreasonable. PG&E also provided the Commission information about this pilot, and how it could be supplemented and improved with other demand-side management programs' participation, in the Energy Efficiency Rulemaking, R.13-11-005. PG&E requests this Commission to consider the information provided in the Energy Efficiency Rulemaking in this proceeding.<sup>2/</sup>

PG&E will complete Phase One of the approved T&D pilot this month. The T&D pilot, as originally proposed in PG&E's 2012-2014 application, was planned to be conducted in two phases throughout 2012 to 2014. The DR portfolio decision, which was delayed until April 2012, required PG&E to file an advice letter for its proposed pilots with detailed pilot plans. (D.12-04-045, OP 80.) PG&E filed Advice Letter 4077-E on June 29, 2012, but the Advice

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<sup>1/</sup> *Order Instituting Rulemaking To Enhance The Role Of Demand Response In Meeting The State's Resource Planning Needs And Operational Requirements*, R.13-09-011 (Sept. 25, 2013), p. 18 (OIR). The OIR also recognizes that DR "has potential value . . . as an alternative to transmission upgrades" and indicates a need to determine how to correctly match DR resources with the needs of the grid. (OIR, pp. 8-9.)

<sup>2/</sup> *Pacific Gas and Electric Company's (U 39-M) Energy Efficiency 2015 Funding Proposal*, R.13-11-005 (Mar. 26, 2014), pp. 23-24; Attachment 3, pp. 46-47. PG&E's filing is available at the following link:  
<http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M089/K641/89641253.PDF>

Letter was not approved until April 2, 2013. (See Appendices B-1 and B-2.) Due to these regulatory processes, PG&E was not authorized to start the pilot until 15 months after the three-year portfolio period began. Because of the delay in obtaining approval of its pilot plan, PG&E has only had sufficient time to complete the first phase of its pilot, rather than both phases. PG&E requests additional time to conduct Phase Two of the pilot, which it has recently proposed to expand to incorporate other demand-side management programs.

PG&E's objectives with respect to T&D planning integration which would be tested during this pilot include: (1) developing the experience and tools needed to create and utilize customer- and location-specific integrated demand side management (IDSMD) resources to assist with distribution capacity constraints; and (2) integrating PG&E's Customer Energy Solutions (CES) planning and operations activities with T&D planning and operations activities to increase the probability of asset deferral and capture additional value from energy efficiency (EE) and DR program funds.

PG&E identified four substation capacity projects to target load reductions in 2014 and 2015. PG&E will evaluate additional substations for potential inclusion in the T&D locational targeting effort on an ongoing basis. The substation capacity projects were selected based on the following criteria: (1) the substations' projected capacity overload was less than 2 MW; (2) the substation capacity expansion projects were not scheduled to begin construction until 2016, allowing two-years lead time to develop the IDSMD projects to mitigate the projected overloading condition; (3) the substations identified have a reasonable probability of achieving the targeted load reductions during 2014-2015 based on an analysis of connected customer's loads; and (4) the substations represent a diverse population of customers including large commercial and industrial, small and medium business and residential; the residential areas selected also include areas with hard-to-reach segments including low income and non-English speaking customers.

In 2013, PG&E completed a series of foundational activities for the first phase of the pilot including: (1) identifying initial candidate substations; (2) streamlining the process of deploying localized DR; and (3) adding new targeted capabilities to marketing efforts. For

example, using analytical tools, the marketing team can now analyze customers served by a specific feeder or substation and find those with energy usage patterns suggesting the best opportunity for EE savings. Using this information and data regarding the customers' industry group, PG&E can identify the partners and channels best positioned to target these customers, and prioritize relevant products and technologies in marketing campaigns.

In 2014, PG&E is taking the following actions to improve T&D integration: (1) increasing marketing and outreach for SmartAC™ by targeting customers with energy usage profiles showing significant air conditioning usage; (2) focusing energy savings assistance (ESA) and EE programs for customers connected to the targeted substations; (3) increasing localized marketing outreach to increase the participation of residential customers in EE programs by targeting the highest energy users; (4) increasing incentives in the targeted areas for peak load reductions; and (5) focusing engineering support to develop IDSM (EE, DR, distributed generation, and energy storage) solutions for the largest customers on each of the targeted substations.

The Commission has a sufficient record regarding this pilot and the activities that PG&E would conduct during the second phase in PG&E's Advice Letter 4077-E, as amended by supplemental Advice Letter 4077 E-B, as well as the information provided with PG&E's Proposal (Attachment D). In addition, the Commission has a record of how this pilot would be supplemented and improved with other demand-side management programs as part of PG&E's companion proposal for a T&D pilot in the Energy Efficiency Rulemaking. PG&E respectfully requests the PD to be amended to allow PG&E to complete this pilot as it should provide valuable information to PG&E's demand-side management and T&D planners regarding whether and how distribution system investments can be deployed to defer or reduce planned T&D investments.<sup>3/</sup> The PD should be revised to approve PG&E's budget request for the pilot or, in

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<sup>3/</sup> The CAISO has repeatedly called for the utilities to develop better evidence to demonstrate that their DR programs are incorporated in their planning to avoid building new T&D facilities. See e.g., D.09-08-027, p. 25. This pilot would help support such a showing and would be useful as an input to the cost-effectiveness analysis. If the utilities can show a T&D benefit through avoided T&D costs, this



the alternative, allow PG&E to conduct Phase II of the pilot with the budget previously approved and collected in 2012-2014 rates.

**B. PG&E's Proposed Changes to the E-DBP Rate Schedule Should Be Approved.**

Two of PG&E's proposed revisions to the DBP - to dispatch a DBP event at its discretion and to expand the dispatch window from 6 a.m.-10 p.m. - were denied and should be reconsidered. (PD, p. 26.)

PG&E's Proposal included revisions to its DBP event triggers. The PD disapproved two of PG&E's proposed changes to DBP which would: (1) add language that would allow PG&E to dispatch the program at its discretion; and (2) expand the event window to 6 a.m.-10 p.m.<sup>4/</sup> The PD proposes to reject the first program improvement on the grounds that it is “*outside of the four criteria currently approved*” for program revisions. (PD, p. 27.) It also rejects the second proposed change due a lack of evidence that benefits would outweigh the burden to participants. (*Id.*) The proposed changes, however, would improve the program for participants and create more value for both customers and ratepayers, and should be approved.

1. PG&E Should Be Authorized to Dispatch a DBP Event at its Discretion.

Due to the voluntary nature of DBP, DBP events do not burden participants. A customer who is unable or unwilling to participate does not need to take any action. Customers voluntarily choose to enroll in the program and then choose whether to participate in any DBP event.<sup>5/</sup> Customers choose to participate by placing a bid; there is no penalty for not placing a bid or not participating.

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would improve program cost-effectiveness results.

<sup>4/</sup> PG&E Proposal, pp. 3-4.

<sup>5/</sup> The rate schedule states that “The selected SAs **may** elect to submit bids to the Program’s website between 12:00 noon and 3:00 p.m. the day the E-DBP event notice was issued.” (Emphasis added.) [http://www.pge.com/tariffs/tm2/pdf/ELEC\\_SCHEDS\\_E-DBP.pdf](http://www.pge.com/tariffs/tm2/pdf/ELEC_SCHEDS_E-DBP.pdf), Sheet 4, first par.

Southern California Edison Company (SCE)'s DBP rate schedule allows it to call a DBP event "[a]t [its] discretion when needed," and contains exemplary factors that may be considered when SCE makes a decision whether to dispatch an event.<sup>6/</sup> The addition of this "soft trigger" to DBP was approved by the Commission in 2006.<sup>7/</sup> Since DBP is a statewide program, PG&E should have the same ability to trigger DBP events as the Commission authorized for SCE.

The discretionary event trigger would benefit customers because it would give them increased opportunities to earn incentives if they choose to participate in a DBP event. Different customers have different time-varying capabilities to shed load. Since customer decisions about participating (or not) occurs for each individual event, whenever PG&E dispatches DBP, it provides opportunities for customers to participate but does not force any customer to participate. The additional discretion to call would increase grid reliability as it would allow PG&E to address an immediate need, particularly during the winter months when some of PG&E's DR programs are unavailable.

The PD would reject this change, in part, because it is outside of the approved criteria for this phase of the proceeding in the *Assigned Commissioner and Administrative Law Judge's Ruling Providing Guidance for Submitting Demand Response Program Proposals*, dated January 31, 2014 (Guidance Ruling). (PD, p. 27.) However, this is inaccurate because, as noted above, PG&E's proposed improvements to DBP would "improve program performance or increase the availability or flexibility of a demand response program" and would not require a budget increase. (Guidance Ruling, pp. 2-3; PD, p. 3.) PG&E's proposed DBP improvements are consistent with the Guidance Ruling criteria and should be approved.

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<sup>6/</sup> SCE's DBP rate schedule provides: "A Day-Ahead DBP Event, may be called at SCE's discretion, when it is needed based on CAISO emergencies, day-ahead load and/or price forecasts, extreme or unusual temperature conditions impacting system demand and/or SCE's procurement needs" <https://www.sce.com/NR/sc3/tm2/pdf/ce185.pdf>, Sheet 2, Special Conditions, Item No. 2.

<sup>7/</sup> D.06-11-049, pp. 36-37.

2. PG&E Should Be Authorized to Expand the DBP Dispatch Window to 6:00 a.m.–10:00 p.m.

An extension of the DBP dispatch window increases DR participation opportunities but does not increase the total hours a customer is required to participate in an event since, as discussed above, participation is voluntary. Accordingly, the PD errs in concluding that this proposed change would burden customers. (PD, p. 27.) The proposal to expand the hours an event may be called would "increase the availability and/or flexibility" of the program, as specified in the Guidance Ruling (p. 2).

The existing dispatch window is from noon to 8:00 p.m. Extending this window to allow PG&E to dispatch an event during the hours of 6 a.m. to 10 p.m. expands the hours a customer would have the option to bid in and participate. It would not extend the dispatch duration, which remains a minimum of two (2) consecutive hours and a maximum of eight (8) hours. This modification would increase the flexibility of DBP by providing customers more options to voluntarily participate. Since customers' peak loads may not coincide with the evening system peak, this expansion could provide more opportunities for customers to participate and also help PG&E manage loads during the morning peak. There is no financial penalty for non-performance or under performance; this change would not disadvantage participating customers.<sup>8/</sup> The expanded hours will also increase the value of DBP since it can be used to address issues that may arise in these expanded hours.

The PD's suggestion that customers would be burdened by an expansion of the dispatch window is incorrect. (PD, p. 27.) DBP customers would benefit from being offered a wider event window in which they could opt to participate and receive incentives.

### **C. New Reporting Requirements**

The PD contains two new reporting requirements for the IOUs: (1) a weekly report to Energy Division and the Office of Ratepayer Advocates (ORA) if the utility does not call a DR

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<sup>8/</sup> [http://www.pge.com/tariffs/tm2/pdf/ELEC\\_SCHEDS\\_E-DBP.pdf](http://www.pge.com/tariffs/tm2/pdf/ELEC_SCHEDS_E-DBP.pdf), Sheet 9, second par.

program when it is economic to do so (PD, pp. 15-16, OPs 1, 2); and (2) a reporting template and timeline for feedback on the IOUs' experience with bidding into the California Independent System Operator (CAISO) markets during 2015-2016. (PD, pp. 20-21, OP 3.)

1. Weekly Report regarding Program Non-Events

The PD would require the IOUs, as suggested by ORA, to indicate on a weekly report "occurrence[s] when a demand response program was economic to dispatch but the utility decided to utilize a non-demand response resource instead." (PD, p. 15.) PG&E supports reporting requirements to the extent they are reasonable and would provide greater transparency regarding its dispatch of its DR programs. However, PG&E is concerned about the scope of the proposed reporting requirement and the short 30-day time frame that the PD would allow for negotiating the reporting format. (PD, p. 16.) As PG&E noted in its *Reply Comments on Assigned Commissioner and Administrative Law Judge's Ruling*, dated March 13, 2014 (PG&E Reply Comments), ORA's proposal is very broad and certain of the information that ORA proposes is either not available or may not be available for reporting within the timeframe proposed. (PG&E Reply Comments, p. 10; PD, p. 15-16.) In addition, while ORA is requesting the "highest cost resources [] dispatched" instead of DR, the IOUs do not have this information as "the dispatch of generation resources is a result of the CAISO market optimization algorithm." (PG&E Reply Comments, p. 10.)

Multi-party agreements, as required by the PD, tend to require more time for coordination and collaboration with external stakeholders. Developing the report format requested may be very complicated. Thus it is very likely that more than thirty days will be required to reach agreement on the new reporting requirement. The 30-day deadline to reach agreement on the report is also problematic given the regulatory schedule for the DR OIR Phase III. The PD should be revised to include a more realistic timeframe.

Therefore, PG&E requests that the negotiation period for the new reporting requirement be extended from **30** days to **90** days, which would provide sufficient time for the parties to reach

agreement. The advice letter would then be filed within 30 days after the end of the negotiation period. Specific language to incorporate this request is included in Attachment A.

2. Report regarding Bidding into the CAISO Market.

The PD requires the IOUs to meet with Commission staff "to discuss and develop a reporting template and timeline to provide feedback on its experience with bidding into the CAISO energy markets." (PD, pp. 20-21; OP 3.) Currently, only a few DR customers are bidding in the CAISO market. The IOUs will need additional experience with customers bidding into the markets in order to develop the required templates and timelines. PG&E proposes that the development of this template be deferred until after the conclusion of the summer 2014 event season, when there will be additional data available on bidding into the market. This information would better inform the reporting requirements. Therefore PG&E requests that the deadline to meet regarding the draft template be moved from 30 days after the decision to November 30, 2014 — a date which is 30 days after the close of the event season for many DR programs. Proposed language for this change is included in Appendix A, below. This delay would allow a better reporting template to be prepared and ultimately would lead to better information for the Commission.

**D. Permanent Load Shifting Program**

The PD appropriately rejects the unsupported proposals of the CESA to increase statewide PLS incentives, lock in an increased budget through 2020, and modify the conversion factors. (PD, pp. 7-8.) As the PD notes, the CESA proposals were not supported by adequate analytics and disregarded the previous Guidance Ruling, which provided specific rules for 2015-2016 funding.

**E. Marin Clean Energy's Participation In DR Programs.**

As noted in the PD, Marin Clean Energy (MCE), as a community choice aggregator (CCA), proposed to participate in the IRM2 Enhancement pilot that was proposed by Energy

Division. (PD, pp. 22-23.) The PD states "barriers make it difficult" for MCE to participate in the Northern California IRM2 Enhancement pilot. (PD, p. 23; FOF 37.) The Northern California IRM2 Enhancement pilot was not approved in PD.

On the broader issue of whether MCE and its CCA customers can participate in DR programs, the PD mentions MCE's unsupported allegations that the DR programs rules are "biased," "anti-competitive," and "[do] not facilitate CCA participation." (PD, p. 22.) PG&E addressed these allegations in its Reply Comments dated March 13, 2014, which explained that MCE's assertions that structural constraints hinder CCA customer participation are without merit. (PG&E Reply Comments, p. 11.)

CCA customers are eligible to participate in most PG&E DR programs. If MCE is interested in participating as an aggregator, MCE could choose to aggregate non-residential customer load in any of PG&E's aggregated DR programs, including the Capacity Bidding Program, the Aggregator Managed Portfolio Program (when open to new aggregators) and the Base Interruptible Program (BIP), which are for non-residential customers. PG&E encourages MCE to participate as an aggregator in one of these existing programs if it is interested in aggregating its non-residential customers' load in a DR program.

**F. PG&E's Supply-Side Pilot**

PG&E's proposed Supply-Side Pilot was approved in the PD. (PD, pp. 23, 26-27; OP 5(e).) However, the pilot is inadvertently listed as disapproved in OP 6(e). PG&E believes this to be an error as it is inconsistent with the PD, and requests OP 6(e) to be corrected, as indicated in Attachment A below.

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**ATTACHMENT A**



## Attachment A: Proposed Revisions To Findings of Fact and Conclusions of Law<sup>2</sup>

### *Proposed modifications to Findings of Fact:*

39. The request by PG&E to dispatch a DBP event at its discretion is more than a clarification, as claimed by PG&E, because allowing PG&E to call an event at its own discretion is outside of the four criteria currently approved. **PG&E's proposed changes to its DBP to call a program event as needed at its discretion and to expand the hours a program event can occur would provide further opportunities for customers voluntarily to participate in a demand response program and should be approved. Since customers are not required to submit a bid, these program revisions would add flexibility to the program without burdening customers.**

40. The request by PG&E to expand the DBP dispatch window could place an unfair burden on participants.

41. PG&E did not present evidence that the benefits of expanding the DBP dispatch window would counterbalance the participant burden.

47. The information provided by PG&E did not adequately explain how its T&D Pilot differs from the first pilot.

48. PG&E did not adequately justify **adequately justified** the need to continue the T&D pilot for two additional years.

### *Proposed Revisions to Conclusions of Law*

14. It is ~~not~~ reasonable for PG&E to be allowed to call a DBP event at its own discretion.

15. It is reasonable to ~~deny~~ **approve** the PG&E request to expand the DBP dispatch window.

### *Proposed Revisions to Ordering Paragraphs*

2. Within ~~30~~ **90** days from the issuance of this decision Pacific Gas and Electric Company, San Diego Gas & Electric Company and Southern California Edison Company (jointly, the Utilities) shall organize and meet with the appropriate Commission Staff, the Office of Ratepayer Advocates, and any other interested stakeholders to develop an agreed-upon reporting template for providing weekly exception reporting, using the draft reporting template in Attachment A as a starting point. All stakeholders should take into consideration other utility reporting requirements to ensure no unnecessary duplication.

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<sup>2</sup> Pursuant to Rule 14.3 (b), this appendix does not count toward the page limit for opening comments.

Within 30 days following the initial meeting, the Utilities shall file a Tier Two Advice Letter requesting approval by the Commission of the final reporting template.

3. ~~Within 30 days of the issuance of this decision,~~ **Once sufficient data is available on bidding DR programs into the CAISO market, but no later than November 30, 2014,** Pacific Gas and Electric Company (PG&E), San Diego Gas & Electric Company (SDG&E) and Southern California Edison Company (SCE) shall meet with the appropriate Commission Staff to discuss and develop a reporting template and timeline to provide feedback on the utilities' experience with bidding into the CAISO energy markets during the 2015-2016 demand response program cycle. Within ~~30~~ 60 days of this initial meeting, PG&E, SDG&E and SCE shall each file a finalized reporting template and timeline for approval via a Tier One Advice Letter.

4. We authorize a budget of \$2.45 million for Pacific Gas and Electric Company to **conduct** the Supply Side pilot.

5. We approve the following requests by Pacific Gas and Electric Company for its 2014-2015 Demand Response Programs and Activities:

a. the continued operation of all 2012-2014 demand response programs during the 2015-2016 bridge years, except as otherwise denied in this decision;

b. the improvements to its Base Interruptible Program, the Demand Bidding Program, and the Auto Demand Response program, ~~except as otherwise denied in this decision;~~

c. the revisions to the Capacity Bidding Program approved in Advice Letter 4332-E;

d. the revisions to the Aggregated Managed Portfolio program agreements approved in D.14-02-033; and

e. the implementation of its proposed Supply Side and Excess Supply Pilots.

f. **the continuation of the transmission and distribution pilot originally approved in D.12-04-045.**

6. The following requested changes to Pacific Gas and Electric Company (PG&E) 2015-2016 Demand Response Programs are denied:

a. ~~to specifically state that PG&E can dispatch a Demand Bidding Program (DBP) event at its discretion;~~

b. ~~to expand the DBP dispatch window to be 6:00 am to 10:00 p.m.;~~

c. all changes to the Air Conditioning Cycling program;

d. to carry over the **unspent and uncommitted portion of the** 2012-2014 Permanent Load Shifting budget;<sup>10/</sup>

e. ~~to extend the Transmission & Distribution Pilot and to perform a Supply Side Demand Response Pilot;~~ and

f. the request by the Office of Ratepayer Advocates to target the marketing of the SmartRate program.

8. We authorize a budget of \$99,050,633 **100,673,133.00** for Pacific Gas and Electric Company for its 2015-2016 demand response programs to be allocated in the previously approved demand response categories as indicated in Attachment 2.

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<sup>10/</sup> The Commission's rules as articulated in EE proceedings allow the IOUs to carry-over funds committed to customer projects from one portfolio cycle to the next to allow customers to complete projects started in once cycle but completed in the next. See e.g., D.12-11-015, pp. 94-95. Thus this Ordering Paragraph requirement should be limited to unspent and uncommitted funds.

**ATTACHMENT B**



**Brian K. Cherry**  
Vice President  
Regulatory Relations

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

Fax: 415.973.6520

June 29, 2012

**Advice 4077-E**

(Pacific Gas and Electric Company ID U 39 E)

Public Utilities Commission of the State of California

**Subject: Demand Response 2012 – 2014 Pilot Proposals**

**Purpose**

Pacific Gas and Electric Company (PG&E) hereby seeks approval to commence the three proposed pilots under the Demand Response (DR) Programs, Pilots and Budgets for 2012 – 2014, per Decision (D.) 12-04-045.

**Background**

As part of the Commission's ruling of D.12-04-045, PG&E must submit a Tier 2 Advice Letter for each one of the proposed pilots, either sixty (60) days after the issuance of D.12-04-045 or six (6) months before the anticipated start date. The Advice Letter will contain PG&E's proposed plan, based on prescribed fundamental questions the Commission staff has outlined as part of Ordering Paragraph (OP) 80.

The Pilots will investigate and examine, in great details, the various needs of Procurement – California Independent System Operator (CAISO), Transmission, Distribution and more importantly, the customer. Each Pilot will contain attributes that will disseminate information which will inform the California Public Utilities Commission, California Energy Commission, Investor Owned Utilities (IOU), CAISO, and other stakeholders the necessary resource needs, technical requirements and structure to sustain reliable, cost-effective DR programs.

**Proposed Pilots**

Attached, is each individual pilot plan PG&E is proposing to pursue over the course of the 2012 – 2014 DR Programs, Pilots and Budgets. The pilots are as follows:

- Commercial and Industrial Based Intermittent Resource Management Pilot 2 (IRM2)
- Transmission and Distribution (T&D) Pilot

- Plug-in Electric Vehicle (EV) Pilot

The attached plans follow D.12-04-045 and include discussions on the following:

1. A problem statement;
2. How the pilot will address DR goal or strategy;
3. Specific objectives and goals for the pilot;
4. A clear budget and timeframe;
5. Relevant standards or metrics;
6. Methodologies to test the cost-effectiveness of the pilot;
7. An Evaluation, Measurement and Verification plan; and
8. A strategy to identify and disseminate best practices and lessons learned.

### **Protests**

Anyone wishing to protest this filing may do so by letter sent via U.S. mail, by facsimile or electronically, any of which must be received no later than **July 19, 2012**, which is 20 days after the date of this filing. Protests should be mailed to:

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

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

Brian K. Cherry  
Vice President, Regulatory Relations  
Pacific Gas and Electric Company  
77 Beale Street, Mail Code B10C  
P.O. Box 770000  
San Francisco, California 94177

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

**Effective Date**

PG&E requests that this Tier 2 advice filing become effective on regular notice, **July 29, 2012**, 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 service list for A.11-03-001. Address changes to the General Order 96-B service list and all electronic approvals should be directed to PG&E at email address [PGETariffs@pge.com](mailto:PGETariffs@pge.com). For changes to any other service list, please contact the Commission's Process Office at (415) 703-2021 or at [Process\\_Office@cpuc.ca.gov](mailto:Process_Office@cpuc.ca.gov). Send all electronic approvals to [PGETariffs@pge.com](mailto:PGETariffs@pge.com). Advice letter filings can also be accessed electronically at: <http://www.pge.com/tariffs>

Handwritten signature of Brian Cherry in cursive script.

Vice President, Regulatory Relations

cc: Service List A.11-03-001

- Attachment 1: Commercial and Industrial Based Intermittent Resource Management Pilot 2 (IRM2)
- Attachment 2: Transmission and Distribution (T&D) Pilot
- Attachment 3: Plug-in Electric Vehicle (PEV) Pilot

# 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 E)**

Utility type:

ELC       GAS  
 PLC       HEAT       WATER

Contact Person: Shirley Wong

Phone #: (415) 972-5505

E-mail: slwb@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) #: **4077-E**

**Tier: 2**

Subject of AL: **Demand Response 2012 - 2014 Pilot Proposals**

Keywords (choose from CPUC listing): **Compliance**

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: **July 29, 2012**

No. of tariff sheets: 0

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

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

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

Tariff schedules affected:

Service affected and changes proposed:

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

**CPUC, Energy Division**  
Tariff Files, Room 4005  
DMS Branch  
505 Van Ness Ave., San Francisco, CA 94102  
EDTariffUnit@cpuc.ca.gov

**Pacific Gas and Electric Company**  
Attn: Brian K. Cherry, Vice President, Regulatory Relations  
77 Beale Street, Mail Code B10C  
P.O. Box 770000  
San Francisco, CA 94177  
E-mail: PGETariffs@pge.com



Advice 4077-E  
June 29, 2012

Attachment 1

Commercial and Industrial Based  
Intermittent Resource Management Pilot 2 (IRM2)

# Commercial and Industrial Based Intermittent Resource Management Pilot 2 (IRM2)

## Problem Statement

**A specific statement of the concern, gap, or problem that the pilot seeks to address and the likelihood that the issue can be addressed cost-effectively through utility programs**

The California electricity grid is changing rapidly due to the 33% Renewable Portfolio Standard mandate, which is resulting in a dramatic influx of intermittent renewable resources. The intermittency of these renewable resources increases the difficulty of balancing supply and demand. It is expected that there will be increased need for flexible resources by the California Independent System Operator (CAISO) to manage the increased intermittency. Based on current studies by the CAISO, California may need roughly 4,600 MW<sup>1</sup> of additional flexible resources to manage the grid by 2020. Demand Response (DR) resources can potentially provide flexible resources to the CAISO, but a complete end-to-end demonstration of the use of DR resources must be conducted to validate processes, procedures, and systems of all parties.

PG&E believes that there is insufficient information to estimate the likelihood that utility programs will cost-effectively be able to provide the flexibility services that the CAISO requires. The purpose of the IRM2 pilot is to validate the requirements needed to provide these services and PG&E plans to examine the capabilities of third parties to provide these flexibility services.

## How the pilot will address DR goal or strategy

**Whether and how the pilot will address a DR goal or strategy**

The 2009-2011 IRM pilot demonstrated some of the capabilities, processes, procedures, and systems needed to provide flexible DR resources to the CAISO. However, the 2009-2011 IRM pilot did not demonstrate all of the capabilities required by the CAISO of flexible DR resources, which will be assessed in the current IRM2 pilot. The IRM2 pilot is planned to address the remaining technical issues that were not addressed in the IRM pilot.

## Objectives and goals for the pilot

**Specific objectives and goals for the pilot**

The key objective of the pilot is to help develop the processes, procedures, and systems required to have demand side resources provide flexibility services to the CAISO. This includes:

- *CAISO Model Development* – Development of the fundamentals for the models used by the CAISO to characterize demand-side resources, such as DR and batteries, for use in the CAISO's market and energy management systems;

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<sup>1</sup> CAISO 2013 Flexible Capacity Procurement Requirement – March 2, 2012

<http://www.caiso.com/Documents/2013FlexibleCapacityProcurementRequirementProposalSupplement.pdf>

- *Visibility Development* – Development of the standard and methodologies used to provide visibility to the CAISO of the operation of demand-side resources;
- *Technology Evaluation and Validation* – Evaluation and validation of the technology types that must be deployed to enable demand-side resources to be a flexible resource for the CAISO; and
- *Extremely Short Term Demand Response Forecasts* – Development of accurate customer load control strategies and forecast of available load consumption or curtailment.

It is PG&E’s intent to have the IRM2 pilot assist in the design of any current or future DR program that PG&E decides to offer. The IRM2 pilot will also form the basis to allow third parties the ability to provide flexibility services that the CAISO requires.

**Budget and timeframe**

**A clear budget and timeframe to complete the pilot and obtain results within a portfolio cycle. Pilots that are continuations of pilots from previous portfolios should clearly state how the continuation differs from the previous phase**

Pilot is requesting \$2,458,336 million over the course of the cycle.

(in millions)	2012	2013	2014
IRM2 Pilot	\$ .458	\$1.250	\$.750

<b>Budget</b>	<b>\$ 2,458,336.00</b>
Program Administrator	\$ 300,000.00
CustomerCare Services (Metering, billing, EDS, etc..)	\$ 150,000.00
Procurement (end to end - scheduling, bidding, etc...)	
Front (Scheduling - Bidding)	\$ 300,000.00
Back (Settlements)	\$ 300,000.00
Policy and Integrated Planning	\$ 108,336.00
Marketing	
Internal	\$ 75,000.00
Vendor	
Consultant + Research	\$ 225,000.00
System (Hosted Solution)	
Platform	\$ 150,000.00
Telemetry	\$ 150,000.00
Forecasting	\$ 100,000.00
Enabling Technologies (Equipment)	\$ 100,000.00
Incentives	\$ 500,000.00

*Field Pilot*

<b>Id #</b>	<b>Task Name</b>	<b>Start</b>	<b>Finish</b>
1	Develop Project Implementation Plan	August 2012	August 2012
2	Finalize technical scope, test approach, and processes; define the CAISO technical requirements and capabilities to support use cases.	August 2012	September 2012
3	Project kick off –specific services (regulation and flexible ramping services) and enabling technologies	October 2012	February 2013
4	Set up resources with proper equipment (telemetry and enabling technology)	February 2013	May 2013
5	Model resources in CAISO EMS	April 2013	July 2013
6	Set up CAISO agreement and file pilot exemption to FERC	January 2013	August 2013
7	Run and certify resources	July 2013	August 2013
8	Conduct and evaluate field testing – bid-settle	September 2013	September 2014
9	Gather customer feedback and customer behavior assessment.	October 2014	November 2014
10	Finalize data collection and post-evaluation assessment process. Develop report.	October 2014	December 2014
11	Publish findings	December 2014	December 2014

### Standards and metrics

#### Information on relevant standards or metrics or a plan to develop a standard against which the pilot outcomes can be measured

PG&E will benchmark relevant programs by other utilities and program administrators on their efforts on flexible ramping and regulation services. PG&E will keep track of the following as it relates to this initiative:

- Customer satisfaction with the different types of DR used for different flexibility services
- Performance of DR resources versus expected response
- forecasted versus actual budgets
- enabling technologies evaluated and deployed
- load reduction, by interval-by hour
- number and duration of events

As the IRM2 pilot proceeds, new standards and metrics may be developed and the ones proposed herein may no longer be relevant. Any changes to the standards and metrics will be communicated with Energy Division as part of the quarterly meeting.

### Methodologies to test the cost-effectiveness of the pilot

#### Where appropriate, propose methodologies to test the cost- effectiveness of the pilot

PG&E believes that evaluating the pilot’s cost-effectiveness is not appropriate at this time. One of the main goals of the IRM2 pilot is to determine the costs and benefits of having DR resources provide flexibility services to the CAISO. The IRM2 pilot will be developing the needed integration with the

CAISO processes, procedures, and systems and will be performing field tests with new equipment, much of this work will be new and PG&E expects that the results will not be indicative of a full program.

A cost-effectiveness analysis, after the pilot is completed, on the expected costs and benefits of a full program that offers these flexibility services would be meaningful to explore the necessary program attributes needed for future DR programs. PG&E intends to work with Energy Division and the DR Measurement and Evaluation Committee (DRMEC) on this potential program cost-effectiveness at the conclusion of the pilot.

### **Evaluation, Measurement and Verification plan**

#### **A proposed EM&V plan**

PG&E will work with DRMEC to properly prepare and conduct a plan to evaluate the performance of some aspects of the IRM2 pilot. PG&E expects that the evaluation will include, but not be limited to, the following:

- An evaluation of any forecasting and baseline tools developed or used in the IRM2 pilot
- An evaluation of the impact and satisfaction of customers participating in the field test
- An evaluation of what type of loads that can meet flexible products/services
  - Study and further evaluation of the type of enabling technologies needed to facilitate load as a flexible resource
- An evaluation of an end to end communication and latency

### **Strategy to identify and disseminate best practices and lessons learned**

**A concrete strategy to identify and disseminate best practices and lessons learned from the pilot to all California utilities and to transfer those practices to resource programs, as well as a schedule and plan to expand the pilot to utility and hopefully statewide usage. Pilot results shall be reported at the public DRMEC spring or fall meeting on load impact or process evaluation results**

PG&E will conduct quarterly meetings with the Energy Division throughout the pilot period. The meetings will include current work, budgets and foreseeable next steps to ensure parties are well informed.

At the conclusion of the field demonstration, PG&E will provide the Energy Division a report highlighting the lessons learned from this pilot. Any key lessons that can be extracted from this pilot will be used to enhance existing or new DR programs in the 2015 – 2017 DR Program & Budget Cycle.

This report will be published and be made publicly available on a designated public internet site by PG&E.

Advice 4077-E  
June 29, 2012

Attachment 2

Transmission and Distribution (T&D) Pilot

# Transmission and Distribution (T&D) Pilot

## Problem Statement

**A specific statement of the concern, gap, or problem that the pilot seeks to address and the likelihood that the issue can be addressed cost-effectively through utility programs**

The Transmission & Distribution (T&D) Pilot is a study and demonstration that will provide significant new information for integrating demand response (DR) resources into the electric T&D organizations planning and operation systems and processes.

Currently, a limited amount of DR resources, such as the Base Interruptible Program (BIP) and the SmartAC program, are able to provide electric load relief when called upon during events to address a local or system wide emergency. However, these DR programs are called through manual procedures. Any responses from these resources are not transparent in real time operations and the ability to dispatch relies on manual processes instead of automation. While limited operational integration between DR and Transmission Operations has occurred, current and future T&D operational needs and processes must be understood to be able to construct DR resources that can be useful to these organizations and increase the value of existing and future DR resources.

## How the pilot will address DR goal or strategy

**Whether and how the pilot will address a DR goal or strategy**

Increasing the value that new and existing DR resources can provide, and be compensated, for is critical to improving their cost-effectiveness, size, and usefulness. To unlock the value streams inherent in potential transmission and distribution improvement deferral, the developers of DR resources must understand the needs of T&D operators and planners and work to have DR resources incorporated into the transmission and distribution operations and plans.

This pilot will undertake a study and demonstration to explicitly develop a resource that can meet the needs of the T&D operators and planners under different scenarios and assist in unlocking potential value stream of DR resources.

## Objectives and goals for the pilot

**Specific objectives and goals for the pilot**

The key objectives of the pilot would be to explore and demonstrate the feasibility and the viability of applying current and future DR resource capabilities to provide services to help the T&D organizations with ongoing planning and operations.

The study will identify the characteristics of the resources needed for the T&D organizations' operations and attempt to create and/or modify DR resources to fulfill these needs. Possible DR resources that may be able to meet these needs include SmartAC program and Large Commercial and Industrial Auto-DR enabled customers. Other possibilities include Home Area Network (HAN) customers and Plug-in Electric Vehicles (PEV) customers, which PG&E will investigate if those technology spaces become mature enough to be incorporated into this pilot.

PG&E is proposing to use a two-step method to execute the T&D Pilot. The first step will be to conduct a paper study in order to document the operational and planning needs of the T&D operations and planning organizations. Specifically, a focus will be on documenting the services these organizations provide and their associated values. This requires an examination of several key questions and tasks, including, but not limited to:

- Timing and duration of the need for services by T&D planning and operations for different types of equipment
- Analyze the T&D organizations' planning and operational processes to identify opportunities, challenges, and potential solutions for integrating DR resources

- Develop test plans for DR resource integration into the T&D organizations' planning and operations processes
- Model the impact on T&D assets if large amounts of DR resources are utilized by T&D operations
- Develop forecasting methodology for extremely locational DR to deliver an accurate forecast of the quantity and speed of the DR resources to T&D operations
- Determine if DR resources can be a reliable resource to possibly defer or postpone T&D upgrades
- Document the aspects of an area that cause them to be categorized as constrained

The second step of the T&D Pilot would be based on the first step's study findings and include field demonstrations. The following DR enabling technologies and resources may be investigated:

- Examination of PG&E's existing enabling and retail programs, such as the SmartAC and AutoDR enabled customers
- Examination of electric vehicles and new residential mass market DR technologies. The T&D Pilot may also consider what, if any, integrated demand side resources beyond DR could provide the services required by T&D operations and planning

### Budget and timeframe

**A clear budget and timeframe to complete the pilot and obtain results within a portfolio cycle. Pilots that are continuations of pilots from previous portfolios should clearly state how the continuation differs from the previous phase**

Pilot is requesting \$2,458,336 million over the course of the cycle.

(in millions)	2012	2013	2014
T&D Pilot	\$ .500	\$.980	\$.979

<b>Budget</b>	<b>\$ 2,458,336.00</b>
Program Administrator	\$ 300,000.00
Metering, billing, datapulling (SCADA+AMI), etc..	\$ 150,000.00
Transmission/Distribution Planning and Operators	\$ 300,000.00
Policy and Integrated Planning	\$ 133,336.00
Marketing	
Internal	\$ 75,000.00
External - Vendor	\$ 400,000.00
Technical Vendors	
Consultant + Research	\$ 400,000.00
System (Hosted Solution)	
Platform	\$ 100,000.00
Telemetry	\$ 75,000.00
Forecasting	\$ 50,000.00
Enabling Technologies (Equipment)	\$ 75,000.00
Incentives	\$ 400,000.00

#### Phase 1: Needs Assessment

Id #	Task Name	Start	Finish
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Id #	Task Name	Start	Finish
1	Develop phase 1 business and technical definition, project scope, timeline, test requirements prior to going into field; develop dependencies.	August 2012	August 2012
2	Develop and procure consultant to conduct phase 1 paper assessment	August 2012	September 2012
3	Interview various levels of Transmission and Distribution planners and operations.	September 2012	November 2012
4	Lay out all the findings and talk to Transmission and Distribution planners and operators to validate study & assessments	November 2012	December 2012
5	Finalize report	December 2012	January 2013

### Phase 2: Field Demonstration

Id #	Task Name	Start	Finish
1	Based on the Phase 1 needs assessment study, work with both Transmission and Distribution to agree on a particular course of action to demonstrate the use of DR for operations – creation of use cases	December 2013	February 2013
2	Along with Transmission and Distribution, finalize technical scope, test approach and processes; define technical requirements to support use cases.	February 2013	March 2013
3	Conduct customer recruitment based on selected and targeted areas for the demonstration – could use a third party model to demonstrate customer acquisition	September 2012	September 2013
4	Development of platforms and Field Demonstration	September 2013	October 2014
5	Develop report	October 2014	December 2014
6	Publish findings	December 2014	December 2014

### Standards and metrics

#### Information on relevant standards or metrics or a plan to develop a standard against which the pilot outcomes can be measured

PG&E will benchmark relevant programs by other utilities and program administrators on their efforts to integrate DR resources and T&D planning and operations. PG&E will keep track of the following as it relates to this initiative:

- forecasted versus actual budgets
- enabling technologies evaluated and deployed
- program design iterations & triggers
- load reduction, by hour
- number and duration of test events

As the pilot progresses, new standards and metrics may be developed and the proposed metrics may not be relevant. Changes will be communicated with Energy Division as part of the quarterly meeting.

### Methodologies to test the cost-effectiveness of the pilot

#### Where appropriate, propose methodologies to test the cost- effectiveness of the pilot

A methodology to test the cost-effectiveness of this pilot is premature at this point. PG&E fully intends to engage and work with the Energy Division, Demand Response Measurement Evaluation Council (DRMEC), Lawrence Berkeley National Laboratory (LBNL) and any other relevant parties to develop the proper criteria to assess the benefits and costs associated with this pilot.

### Evaluation, Measurement and Verification plan

#### A proposed EM&V plan

PG&E will work with DRMEC to properly prepare and implement a plan to evaluate the T&D Pilot. The base evaluation will identify and include, but not limited to, the following:

- Evaluate SmartMeter data from each of the customers that participates in the field demonstration and assess the load reduction. Data will also be compared against any available SCADA data and/or other data sets to quantify the load reduction
- Evaluation of the accuracy of any forecasting tools developed and used

### **Strategy to identify and disseminate best practices and lessons learned**

**A concrete strategy to identify and disseminate best practices and lessons learned from the pilot to all California utilities and to transfer those practices to resource programs, as well as a schedule and plan to expand the pilot to utility and hopefully statewide usage. Pilot results shall be reported at the public DRMEC spring or fall meeting on load impact or process evaluation results**

PG&E will conduct quarterly meetings with the Energy Division throughout the pilot period. The meetings will include current work, budgets, and foreseeable next steps to ensure parties are well informed.

At the conclusion of Phase 2, PG&E will provide the Energy Division a report highlighting the lessons learned from this pilot. Any key lessons that can be extracted from this pilot will be used to enhance existing or new DR programs in the 2015 – 2017 DR Program & Budget Cycle.

This report will be published and be made publicly available on a designated public internet site by PG&E.

Advice 4077-E  
June 29, 2012

Attachment 3  
Plug-in Electric Vehicle (PEV) Pilot

# Plug-in Electric Vehicle (PEV) Pilot

## Problem Statement

**A specific statement of the concern, gap, or problem that the pilot seeks to address and the likelihood that the issue can be addressed cost-effectively through utility programs**

PEVs can theoretically provide significant amounts of high quality DR to the electricity grid, both at an extremely local (distribution) level and at the California Independent System Operator (CAISO) level. However, at this time, PG&E and the other Investor Owned Utilities (IOUs) do not have a plug-in electric vehicle (PEV) demand response (DR) program. This is due to the unique nature of PEVs, as they are local significant sources of load and potential demand response, but also mobile in nature.

It is currently unknown whether utility programs will be able to offer a cost-effective DR program for PEVs. However, to fully harness the value of PEVs for customers and ratepayers, PG&E will be central in the value creation, as the DR resources that any PEV DR provider would offer must be integrated in the planning and operations of PG&E.

## How the pilot will address DR goal or strategy

**Whether and how the pilot will address a DR goal or strategy**

PG&E intends for the 2012-2014 PEV pilot work to concentrate on evaluating the specific requirements for PEVs and how their unique attributes can be incorporated in both CAISO and distribution level operations and planning. This would pave the way to allow any PEV DR provider to offer valuable services to PG&E's planning and operations groups.

## Objectives and goals for the pilot

**Specific objectives and goals for the pilot**

The 2012-2014 PEV pilot will concentrate on determining:

- *Requirements Needed To Obtain Utility Benefits:* Determine the requirements needed for PG&E to incorporate DR from PEVs into its operational and planning groups and the associated benefits that would accrue to DR PEV providers.
- *Communication Capabilities:* Evaluate the technical capability to provide timely two way communication, such as price and Direct Load Control messages, to the Electric Vehicle Supply Equipment (EVSE) and PEVs over the advanced metering infrastructure (AMI) network and/or broadband network using national standards
- *DR Response Characteristics:* Evaluate how quickly and in what manner EVSEs and PEVs respond to signals to alter charging patterns based on the PEV battery's state of charge and user profiles, both on an individual basis and in aggregate.
- *Customer Response:* Evaluate customers' charging patterns, preferences, behavior, and reactions to utility interaction with PEV charging.

## Budget and timeframe

A clear budget and timeframe to complete the pilot and obtain results within a portfolio cycle. Pilots that are continuations of pilots from previous portfolios should clearly state how the continuation differs from the previous phase

The 2009-2011 PG&E PEV pilot authorized by the California Public Utilities Commission (Commission) in D.09-08-027 allowed PG&E to perform early stage proof of concept testing for: (1) Smart Charging over the existing advanced meter infrastructure (AMI) network, (2) basic communication signals to Electric Vehicle Supply Equipment (EVSE); and (3) identification of the factors that will hinder the implementation of a charging program for residential customers.

In contrast, the 2012-2014 PG&E PEV pilot is concentrated on proving the value streams that can be gained through the incorporation of DR from PEVs in PG&E's planning and operations and the requirements the DR PEV providers need to be able to meet to realize these benefits.

Pilot is requesting \$3 million over the course of the cycle.

	Cumulative	2012	2013	2014
<b>Total</b>	\$ 3,000,000	\$ 190,000	\$ 1,330,000	\$ 1,480,000
<b>PG&amp;E</b>				
Project Management	\$ 300,000	\$ 100,000	\$ 100,000	\$ 100,000
Transmission & Distribution Planning and Operations	\$ 180,000	\$ 30,000	\$ 75,000	\$ 75,000
Energy Procurement	\$ 90,000	\$ 30,000	\$ 30,000	\$ 30,000
Policy and Integrated Planning	\$ 90,000	\$ 30,000	\$ 30,000	\$ 30,000
Marketing & Incentives	\$ 100,000	\$ -	\$ 25,000	\$ 75,000
Customer Care Services	\$ 500,000	\$ -	\$ 250,000	\$ 250,000
<b>Vendor or PG&amp;E</b>				
Telemetry and Forecasting Service	\$ 150,000	\$ -	\$ 75,000	\$ 75,000
Enabling Technologies	\$ 200,000	\$ -	\$ 50,000	\$ 150,000
IT Development	\$ 1,200,000	\$ -	\$ 600,000	\$ 600,000
Customer Research	\$ 190,000	\$ -	\$ 95,000	\$ 95,000

### Phase 1: Evaluation

<b>Id #</b>	<b>Task Name</b>	<b>Start</b>	<b>Finish</b>
1	Develop phase 1 business and technical definition, project scope, timeline, test requirements prior to going into field; develop dependencies. Develop general phase 2 scope and requirements based on OpenADR and HAN.	August 2012	October 2012
2	Develop vendor selection criteria, including scope for phase 2	October 2012	November 2013
3	Select vendors for pilot.	November 2012	December 2012
4	Procure equipment and set up for testing in lab.	December 2012	January 2013
5	Conduct lab-based evaluation and testing.	January 2013	February 2013

### Phase 2: Field Pilot

<b>Id #</b>	<b>Task Name</b>	<b>Start</b>	<b>Finish</b>
1	Analyze phase 1 technology and communication testing results; feedback into phase 2 (pilot) business scope, test criteria, and finalize user cases.	March 2013	March 2013

<b>Id #</b>	<b>Task Name</b>	<b>Start</b>	<b>Finish</b>
2	Finalize technical scope, test approach and processes; define technical requirements to support use cases.	March 2013	March 2013
3	Finalize types of data to harvest, formats and post-evaluation assessment process.	March 2013	March 2013
4	Develop participant selection criteria including any relevant concentration of PEV cars and networks, other possible deployment and demonstrations.	March 2013	April 2013
5	Identify and train pilot support staff.	April 2013	June 2013
6	Recruit, qualify, and set-up customers.	May 2013	June 2013
7	Conduct pilot and test use cases.	July 2013	August 2014
8	Assess early pilot results and analyze data, write up post-pilot technical assessment and lessons learned.	March 2014	May 2014
9	Gather customer feedback and customer behavior assessment.	March 2014	May 2014
10	Assess charging capabilities and IT requirements to scale up to a mass-market program using both retail and commercial process.	June 2014	August 2014
11	Evaluate concept and future viability of program.	June 2014	August 2014
12	Develop report.	September 2014	December 2014
13	Publish findings.	December 2014	December 2014

## Standards and metrics

**Information on relevant standards or metrics or a plan to develop a standard against which the pilot outcomes can be measured**

PG&E will benchmark relevant programs by other utilities and program administrators on their efforts to integrate and value PEVs into their planning and operations planning. PG&E will keep track of the following as it relates to this initiative:

- Customer satisfaction with the different types of PEV DR strategies used
- Performance of PEV DR resources versus expected response
- Forecasted versus actual budgets
- Enabling technologies evaluated and deployed
- Load response and speed of response, by interval-by hour

As the pilot progresses, new standards and metrics may be developed and the proposed metrics may not be relevant. Changes will be communicated with Energy Division as part of the quarterly meeting.

## Methodologies to test the cost-effectiveness of the pilot

**Where appropriate, propose methodologies to test the cost- effectiveness of the pilot**

A methodology to test the cost-effectiveness of this pilot is premature at this point. PG&E fully intends to engage and work with the Energy Division, Demand Response Measurement Evaluation Council (DRMEC), Lawrence Berkeley National Laboratory (LBNL) and any other relevant parties to develop the proper criteria to assess the benefits and costs associated with this pilot.

## Evaluation, Measurement and Verification plan

**A proposed EM&V plan**

PG&E will work with DRMEC to properly prepare and implement a plan to evaluate the PEV Pilot. The base evaluation will identify and include, but not limited to, the following:

- A thorough evaluation of customer impact and satisfaction must be undertaken to evaluate future programs
- Evaluate SmartMeter data from each of the customers that participates in the field demonstration and assess the load reduction. Data will also be compared against any available SCADA data and/or other data sets to quantify the load reduction provided by the PEV
- Evaluation of the accuracy of any forecasting tools developed and used to assist on the Distribution Operation side
- Test and analyze various communications and their latencies
- Any emerging technologies (ET) used for this PEV Pilot will be coordinated alongside PG&E DR's ET group

### **Strategy to identify and disseminate best practices and lessons learned**

**A concrete strategy to identify and disseminate best practices and lessons learned from the pilot to all California utilities and to transfer those practices to resource programs, as well as a schedule and plan to expand the pilot to utility and hopefully statewide usage. Pilot results shall be reported at the public DRMEC spring or fall meeting on load impact or process evaluation results**

PG&E will conduct quarterly meetings with the Energy Division throughout the pilot period. The meetings will include current work, budgets, and foreseeable next steps to ensure parties are well informed.

At the conclusion of Phase 2, PG&E will provide the Energy Division a report highlighting the lessons learned from this pilot. Any key lessons that can be extracted from this pilot will be used to enhance existing or new DR programs in the 2015 – 2017 DR Program and Budget Application.

This report will be published and be made publicly available on a designated public internet site by PG&E.

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

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## PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3298

April 2, 2013

## Advice Letter 4077-E-B

Mr. Brian Cherry  
Vice President, Regulatory Relations  
Pacific Gas and Electric Company  
77 Beale St., Mail Code B10C  
San Francisco, CA 94177

Subject: Proposed Demand Response 2012-2014 Pilot Projects in Compliance with  
Decision 12-04-045

Dear Mr. Cherry:

**Summary**

The Energy Division has determined that PG&E's Advice Letter (AL) 4077-E, as amended by supplemental 4077-E-B, is in compliance with Decision (D.)12-04-045 and is effective today.

The Division of Ratepayer Advocates (DRA) filed protests in response to AL 4077-E, and the first supplemental (AL 4077-E-A). In its reply to DRA's protests, PG&E addressed DRA's concerns and provided additional information as requested. Based on PG&E's response, the Energy Division approves PG&E AL 4077-E-B, as it complies with D.12-04-045.

**Background**

On June 29, 2012, PG&E filed AL 4077-E pursuant to Ordering Paragraph (OP) 80 of D.12-04-045, which directed the utilities to submit a Proposed Pilot Plan for each Demand Response (DR) pilot through a Tier 2 Advice Letter. D. 12-04-045 required each Proposed Pilot Plan to contain the following nine elements:

1. New and innovative program design, concepts or technology that have not yet been tested or employed;
2. A specific statement of concern, gap or problem that the pilot seeks to address through utility programs;
3. How the pilot matches characteristics for Smart Grid technologies enumerated in Senate Bill 17, and D.10-06-047;
4. Specific objectives and goals for the pilot;
5. A clear budget and timeframe to complete the pilot and obtain results. Pilots that are continuations of pilots from previous portfolios should clearly state how they differ from the previous phase;

Brian Cherry  
April 2, 2013  
Page 2

6. Information on relevant standards or metrics, or a plan to develop a standard against which the pilot outcomes can be measured.
7. Where appropriate, propose methodologies to test the cost-effectiveness of the pilot;
8. A proposed EM&V plan;
9. A concrete strategy to identify and disseminate best practices and lessons learned from the pilot to all California utilities and to transfer those practices to resource programs, as well as schedule and plan to expand the pilot to utility and hopefully statewide usage.

The Commission authorized spending for DR pilots in D.12-04-045 contingent upon the submittal and approval of the required pilot plans described in OP 80.

PG&E proposes three pilots: Commercial and Industrial Based Intermittent Resource Management pilot, Transmission and Distribution (T&D) pilot, and Plug-In Electric Vehicle pilot. Attachment 1 provides a detailed description of the pilots.

#### **Protests**

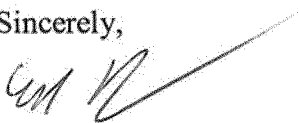
DRA filed a protest to the original advice letter on July 19, 2012. Although DRA generally supports the goals and intent of PG&E's electric vehicle demand response pilot, they contend that PG&E did not provide sufficient information to support the proposal.

On Dec. 10, 2012, DRA filed a protest in response to the supplemental filing, AL 4077-E-A. DRA reiterated the concerns from its July 19<sup>th</sup> protest letter and argued that the electric vehicle market is still too nascent to warrant testing the residual value of used vehicle batteries. They asked Energy Division to continue the suspension in order to collect additional details on the proposal.

#### **Disposition**

Energy Division reviewed the protests and replies and discusses its disposition in Attachment 2. PG&E's proposed Demand Response Pilot plan (AL 4077-E-B), and its response to the protest of DRA are reasonable. Energy Division approves AL 4077-E-B, as it complies with OP 80 of D.12-04-045, and requests that PG&E begin implementing its proposed PEV project immediately.

Sincerely,



Edward Randolph  
Director, Energy Division  
California Public Utilities Commission

cc: Chris Danforth, DRA  
Sudheer Gokhale, DRA  
Michael Campbell, DRA  
Adam Langton, Energy Division

## Attachment 1: Description of Pilots

Below is a description of the three pilots proposed in Advice Letter 4077-E-B.

### *Commercial and Industrial Based Intermittent Resource Management Pilot 2 (IRM2)*

PG&E's IRM2 pilot will help develop the processes, procedures and systems necessary to allow demand-side resources to provide flexibility services to the CAISO. This pilot will develop and/or examine the following:

- Develop the models used by the CAISO to characterize demand-side resources;
- Develop the standard and methodologies used to make the operation of demand-side resources visible to the CAISO;
- Evaluate and validate the types of technology needed to allow demand-side resources to be a flexible resource to the CAISO; and
- Develop accurate customer load control strategies and forecast extremely short-term load consumption or reduction.

In addition, the IRM2 pilot will help design current or future PG&E DR programs and form the basis to enable third parties to provide flexibility services to the CAISO.

### *Transmission and Distribution (T&D) Pilot*

PG&E's T&D pilot will identify the characteristics of the resources that T&D organizations need for their operations and aim to create and/or modify DR resources to fulfill these needs. The T&D pilot is a two-step process.

In the first step, the pilot will study and document the following:

- Time and duration of T&D operators' and planners' need for services for different types of equipment;
- T&D planning and operational processes to better integrate DR resources;
- Plans that integrate DR resources into T&D planning and operations;
- Impact that DR resources will have on T&D assets;
- Methodology to accurately forecast the capabilities of extremely locational DR resources for T&D operations;
- Whether DR resources can defer or postpone T&D upgrades; and
- Aspects and causes of constrained areas.

The second step of the T&D pilot will be based on the first step's findings. The second step will investigate the DR enabling technologies and resources below:

- PG&E's current enabling and retail programs (e.g., SmartAC and AutoDR enabled programs); and
- Electric vehicles, new residential mass market DR technologies and non-DR demand-side resources, if any, that can meet the needs of T&D operators and planners.

### *Plug-In Electric Vehicle Pilot*

The initial filing proposed to evaluate the requirements needed for PEVs to serve as a demand response resource. The proposal requested \$3 million to study the communication and technical requirements needed to enable PEVs to provide demand response services to the wholesale market and the utility distribution system. Since PG&E currently lacks DR tariffs for PEVs, the proposal is intended to provide the necessary data to develop DR tariffs. PG&E proposes coordinating with LBNL to develop cost-effectiveness metrics, and it plans to share the results of this study through PG&E's website.

On Dec. 21, 2012, PG&E submitted supplemental information to the original proposal material (AL 4077-E-A). The supplemental material revised the scope, timeline and objectives of the electric vehicle demand response pilot. In addition to testing the DR functionality of batteries that are in PEVs, PG&E proposes evaluating the feasibility of using second-life electric vehicle batteries as part of this pilot. The second life proposal has two primary goals: evaluating the benefits and costs of utilizing PEV batteries on the electric grid and evaluating the marketing and incentive mechanisms needed to obtain demand response from PEV second life batteries. PG&E proposes engaging third party partners through an RFP that will provide PG&E with the customers and the batteries needed to conduct its DR and second life pilot. The supplemental requested that the pilot timeline and budget be extended into 2015.

On March 5, 2013, PG&E submitted a second supplemental (AL 4077-E-B). This supplemental made minor modifications to the proposal. Energy Division did not extend the protest period, given the limited nature of these changes.

## **Attachment 2: Discussion of Protests and Response**

### **DRA's Protest**

In its July 19, 2012 protest, DRA argued that while the objectives of the pilot were worthwhile, the lack of detail in the proposed electric vehicle demand response pilot plan required additional scrutiny from the Commission. DRA asked that PG&E provide more details related to the specific activities listed under the proposed funding activities. Additionally, DRA requested additional information related to the customer enrollment strategy, ownership of charging stations, and liability risk.

DRA reiterated these concerns in its January 10<sup>th</sup> protest letter filed in response to PG&E's December 21<sup>st</sup> supplemental (AL 4077-E-A). In the second protest letter, DRA reiterated the same concerns it raised in its July 19<sup>th</sup> protest letter. DRA also raised questions about the need to start this pilot now, given the nascent stage of the PEV market. They asked Energy Division to continue the suspension in order to collect additional details on the proposal.

### **PG&E's Reply**

On July 26, 2012, PG&E submitted its reply to the protest of DRA. In its reply, PG&E provided additional details on its proposed scope of work and budget, answering the eight questions DRA included in its July 19<sup>th</sup> protest letter.

Following the first supplemental, PG&E answered the same questions posed by DRA in the context of the new proposal. As part of its reply, PG&E provided a budget breakdown by activity.

### **Discussion**

Energy Division confirms that PG&E has complied with D.12-04-045 in that its Proposed Pilot Plans contains all nine elements as required by the Decision.

DRA's protests identified two primary concerns: lack of budget justification and a concern that it is too early to begin research on battery second life applications. The additional details provided by PG&E regarding the project scope and budget provide sufficient additional information to address DRA's concern that the proposed plan is vague and inadequately detailed. While categories like marketing and incentives remain open-ended, Energy Division staff believes that flexibility is needed in order for PG&E to test new incentive mechanisms in coordination with third party partners.

Energy Division does not believe that research on battery second-life is premature. The Governor's Zero Emission Vehicle Initiative identified this area as a potential opportunity to help support the state's ZEV adoption targets.<sup>1</sup> Determining the value that used vehicle batteries can provide to the grid can help develop a market for used vehicle batteries in advance of used vehicle batteries reaching the market. Providing certainty around the residual value of vehicle batteries may ultimately help reduce the upfront cost of vehicle batteries.

As proposed by PG&E, Energy Division will meet with PG&E on a quarterly basis to discuss progress on the pilot. As part of these quarterly reviews, Energy Division staff will ask that PG&E staff provide updates on its budget and the RFP process.

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<sup>1</sup> p. 3, ZEV Action Plan, Governor's Interagency Working Group on Zero Emission Vehicles.