

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA

Application of Californians for  
Renewable Energy, Inc. (CARE) to  
modify Decision 06-07-027.

A.10-09-012  
(Filed September 20, 2010)

**RESPONSE OF THE DIVISION OF RATEPAYER ADVOCATES TO  
APPLICATION OF CALIFORNIANS FOR RENEWABLE ENERGY, INC.  
(CARE) TO MODIFY DECISION 06-07-027**

KAREN PAULL

Attorney for the Division of Ratepayer  
Advocates

California Public Utilities Commission  
505 Van Ness Ave.  
San Francisco, CA 94102  
Phone: (415) 703-2630  
Fax: (415) 703-2262  
E-Mail: kpp@cpuc.ca.gov

THOMAS ROBERTS

Analyst for the Division of Ratepayer  
Advocates

California Public Utilities Commission  
505 Van Ness Ave.  
San Francisco, CA 94102  
Phone: (415) 703 - 5278  
E-Mail: tcr@cpuc.ca.gov

October 20, 2010

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA

Application of CALifornians for  
Renewable Energy, Inc. (CARE) to  
modify Decision 06-07-027.

A.10-09-012  
(Filed September 20, 2010)

**RESPONSE OF THE DIVISION OF RATEPAYER ADVOCATES TO  
APPLICATION OF CALIFORNIANS FOR RENEWABLE ENERGY, INC.  
(CARE) TO MODIFY DECISION 06-07-027**

**I. INTRODUCTION**

Pursuant to Rule 16.4 of the Commission's Rules of Practice and Procedure, the Division of Ratepayer Advocates (DRA) submits this response to the Application of Californians for Renewable Energy, Inc. (CARE) to Modify Decision 06-07-027 (Application).<sup>1</sup> In Decision 06-07-027, the Commission approved PG&E's Advanced Metering Infrastructure (AMI) application (although PG&E later changed the type of electric meters and communications technology for the electric metering that the Commission approved in that decision). CARE claims that PG&E's SmartMeters: 1) cause "harmful interference;"<sup>2</sup> 2) contributed to the recent San Bruno gas line

---

<sup>1</sup> Rule 16.4 governs petitions for modification of Commission decisions. Although the relief sought by CARE is modification of a Commission decision, CARE was instructed by the Docket Office to file its request as an "application for modification," rather than a "petition for modification." DRA presumes that the rules applicable to petitions for modification nevertheless apply to this case.

<sup>2</sup> Application, p.3 (asserting that PG&E's SmartMeters do not meet FCC regulation 47 CFR15.5 b regarding "harmful" interference).

explosion;<sup>3</sup> and 3) produce radiation which is harmful to humans.<sup>4</sup> CARE also requests that the Commission order PG&E to do an analysis of its AMI project pursuant to the California Environmental Quality Act (CEQA). Although CARE's Application is not well supported, DRA recommends that the Commission gather data related to the radio frequency (RF) issues (interference and health effects of radiation)<sup>5</sup>. The Commission should review this data before additional action is considered, in a public proceeding, with the participation of consumer advocates and other interested stakeholders. DRA's recommendations on what data would be most useful for this inquiry are provided below.

## **II. DISCUSSION**

### **A. Environmental Review Pursuant to CEQA**

In Decision 06-07-027 (the Decision), the Commission concluded that CEQA review is not required for the AMI deployment because it comes within exemptions for existing public utility facilities.<sup>6</sup> In its Application, CARE states that although review of PG&E's AMI project under the California Environmental Quality Act (CEQA) is not required, the Commission has the discretion to require a CEQA analysis, and should order PG&E to conduct one. In support of this request. CARE points to the following new developments:

- the Commission has received over 1300 electric SmartMeter complaints from PG&E customers, and
- CARE has filed a complaint against both the Commission and PG&E with the Federal Communications Commission (FCC) alleging that electromagnetic radiation (EMR) from PG&E's SmartMeters "created the ignition source" for

---

<sup>3</sup> Application, p.4: "EMF from PG&E's SmartMeters created the ignition source" of the September 9, 2010 San Bruno gas line explosion.

<sup>4</sup> Application, pp. 10-13.

<sup>5</sup> In these comments, "radiation" refers to electromagnetic energy emitted at radio frequencies, including SmartMeter communication signals at 450 MHz, 900 MHz, and 2.4 GHz.

<sup>6</sup> Decision, p. 61, citing CEQA Guidelines § 15301(b) and § 15302(c); Conclusion of Law 19, at p. 68: "AMI is not a project as defined by 15378(a). Therefore, no CEQA review is necessary."

the San Bruno gas pipeline explosion and that PG&E's SmartMeter installations are in violation of FCC regulation 47 CFR 15.5 [regulating RF interference for emitters covered by that regulation].<sup>7</sup>

CARE also requests that the Commission stay further SmartMeter deployment until PG&E demonstrates to the Commission that it is in compliance with that regulation.<sup>8</sup>

CARE may be correct that a case could be made for environmental review under CEQA, but CARE has not made that case. CARE does not cite legal authority to support its request that the Commission "order PG&E" to conduct an environmental review. Furthermore, environmental review is to be conducted before a project is approved, not afterwards. CARE has not explained how the FCC regulation is applicable to PG&E's SmartMeter system. Given this, DRA does not support CARE's request for CEQA review on the basis of this Application.

#### **B. Health and safety impacts**

CARE asserts that PG&E's SmartMeter have adverse health and safety impacts on its customers, but it does not support these claims with citations to the record, or with evidence of new or changed facts relevant to these claims, as required by Rule 16.4. For example, the Application (on pages 10-13) lists numerous adverse health impacts of EMR and radio frequency radiation (RFR), but supports these assertions with only a citation to a conference, and no peer-reviewed studies or articles. Similarly, CARE's allegation that SmartMeters "created the ignition source [of the San Bruno explosion]" is unsupported by any calculations based on actual RF emissions and actual materials in close proximity to the meter which could create a so-called "break spark."<sup>9</sup>

---

<sup>7</sup> Application, pp. 3-4.

<sup>8</sup> Id., p. 4.

<sup>9</sup> Application, p.14. The Application also fails to "propose specific wording to carry out all requested modification to the decision," as required by Rule 16.4(b).

Based on the health and safety concerns CARE raises, it asks the Commission to modify the Decision to:

- Order PG&E to conduct an “assessment of risk from the meters including following FCC as well as international testing standards [and] testing protocols” [*sic*].
- Stay further deployment of PG&E SmartMeters until PG&E provides the Commission evidence of compliance with FCC regulation 47 CFR 15.5 b.
- “Order PG&E to remove any SmartMeter equipment subject to be required to cease operating the device and remove them upon notification by a FCC representative that the device is causing harmful interference” [*sic*].<sup>10</sup>

DRA does not support these requests, but, despite the lack of supporting evidence in CARE’s application, DRA recommends immediate Commission action to address concerns about RF interference and possible adverse impacts on health and safety. Such concerns have been raised in filings by local governments<sup>11</sup>, and consumers<sup>12</sup>, and by numerous individual customers in person at Commission public business meetings. This level of public concern warrants action by the Commission to determine if these concerns are well founded, regardless of CARE’s Application.

**1. The Commission has a responsibility to protect public health and safety.**

Although DRA’s statutory mandate is to try to obtain “the lowest possible rate for service consistent with reliable and safe service levels” (Public Utilities Code § 309.5(a)), and in that role supports the provision of service that is safe and reliable, the Commission has the primary authority and responsibility to protect the health and welfare of

---

<sup>10</sup> Application, p.4. DRA finds the request quoted in the third bullet unintelligible.

<sup>11</sup> See motions to intervene and other filings in support of the City and County of San Francisco’s petition seeking temporary suspension of SmartMeter deployment pending investigation, filed by the City and County of Santa Cruz, the City of Capitola, the City of Scotts Valley, the City of Monte Sereno, the City of Watsonville, and the Town of Fairfax, in A.07-12-009.

<sup>12</sup> See, e.g., Application of Heather Epps for Modification of D.06-07-027 and D.09--03-026 (A.10-09-015).

California residents by ensuring that public utility service is safe and reliable. See, e.g., Public Utilities Code §§ 451<sup>13</sup>, 761<sup>14</sup>, 762<sup>15</sup>, and 768.<sup>16</sup>

---

<sup>13</sup> § 451 (Just and reasonable charges; Service; Rules) provides in relevant part:

...

Every public utility shall furnish and maintain such adequate, efficient, just, and reasonable service, instrumentalities, equipment, and facilities, including telephone facilities, as defined in Section 54.1 of the Civil Code, as are necessary to promote the safety, health, comfort, and convenience of its patrons, employees, and the public.

All rules made by a public utility affecting or pertaining to its charges or service to the public shall be just and reasonable.

<sup>14</sup> § 761 (Authority to regulate by order or rule following finding of unjust, unsafe, or inadequate practices; Requirement of compliance) provides:

Whenever the commission, after a hearing, finds that the rules, practices, equipment, appliances, facilities, or service of any public utility, or the methods of manufacture, distribution, transmission, storage, or supply employed by it, are unjust, unreasonable, **unsafe**, improper, inadequate, or insufficient, the commission shall determine and, by order or rule, fix the rules, practices, equipment, appliances, facilities, service, or methods to be observed, furnished, constructed, enforced, or employed. The commission shall prescribe rules for the performance of any service or the furnishing of any commodity of the character furnished or supplied by any public utility, and, on proper demand and tender of rates, such public utility shall furnish such commodity or render such service within the time and upon the conditions provided in such rules. (emphasis added)

<sup>15</sup> § 762 (Authority to require changes in physical property of public utilities) provides in relevant part:

Whenever the commission, after a hearing, finds that additions, extensions, repairs, or improvements to, or changes in, the existing plant, equipment, apparatus, facilities, or other physical property of any public utility or of any two or more public utilities ought reasonably to be made, or that new structures should be erected, **to promote the security or convenience of its employees or the public, or in any other way to secure adequate service or facilities**, the commission shall make and serve an order directing that such additions, extensions, repairs, improvements, or changes be made or such structures be erected in the manner and within the time specified in the order. (emphasis added)

<sup>16</sup> § 768 ( Authority to direct use of safety devices) provides in relevant part:

The commission may, after a hearing, require every public utility to construct, maintain, and operate its line, plant, system, equipment, apparatus, tracks, and premises **in a manner so as to promote and safeguard the health and safety of its employees, passengers, customers, and the public.** (emphasis added)

There is clearly a high level of public concern over possible adverse safety and health impacts of the SmartMeter system. The Commission has an obligation to investigate whether these concerns are well founded, *in a public proceeding*. Such a proceeding could include an en banc hearing in which the Commission gathers information from qualified experts, as the Commission has done, for example, in investigating “cramming.”<sup>17</sup> To the extent that the Commission finds, based on information that is publicly and properly vetted, that the public’s concerns are misplaced, the Commission’s actions and explanations should reassure the public. If the Commission finds that there are health or safety problems that need to be addressed, it can (and must) proceed to finding solutions.

## 2. Recommendations

### a) **PG&E should be ordered to quantify SmartMeter RF emissions and customer exposure levels.**

Determination of a causal relationship between SmartMeters and customer health requires a three-step process analogous to establishing air quality impacts:

- calculate source emission levels,
- model exposure or emissions concentrations at specific locations adjacent to the source; and
- compare modeled exposure to relevant standards.<sup>18</sup>

In the case of RF health impacts, the final step is the most likely to produce results that will be controversial, due to the fact that existing standards can be criticized because of the inconclusive nature of the multitude of studies which could be cited. However, if results from the first two steps indicate that SmartMeter RF emissions are significantly lower than those of other existing sources, or have insignificant impact on compliance

---

<sup>17</sup> In R.00-02-004.

<sup>18</sup> For air quality impacts, local (BAAQMD), state (CARB), and federal (EPA) standards are relevant, as an example.

with existing standards, the final step may be less controversial. DRA therefore recommends performing the first two steps as follows.

First, PG&E should quantify the per-unit RF emissions generated from SmartMeter components, including the data collector unit (DCU), the meter network interface card (NIC), the home area network (HAN) transmitter, and any other source of RF emissions. Emissions should be quantified in terms of emission power, directionality and time duration (duty cycle) for Aclara gas modules and all types of electric meters deployed. Second, RF exposure levels should be modeled for representative customers. These levels should include the cumulative radiation from each SmartMeter component that irradiates a given customer location. Modeling scenarios should include a worst-case scenario, such as multiple meters located inside a building and very close to a stay-at-home occupant. Other scenarios should reflect a full range of key variables including the distances between meter and occupants, communication duty cycles, HAN enabled equipment, and building materials between the meter and the occupants. These emissions should be compared with those from other RF sources – including cell phones, cell towers, wifi transmitters, cordless phones, and baby monitors – to determine the relative magnitude produced by the entire SmartMeter system. Both peak and time-averaged emissions should be analyzed.

Finally, the resulting RF exposure levels, including those from the existing background sources mentioned above should be compared to applicable health guidelines and standards, such as FCC limits for “maximum permissible exposure”.<sup>19</sup> DRA recommends completing these steps before the Commission considers whether additional investigation is warranted.

---

<sup>19</sup> See Supplement C to FCC OET Bulletin 65, p.26, available at <http://www.fcc.gov/oet/info/documents/bulletins>.



**b) The Commission should direct PG&E to explain what safety precautions it took in deploying SmartMeter equipment in close proximity to natural gas equipment.**

PG&E's deployment of SmartMeters results in the collocation of flammable natural gas with electronic measurement equipment. This situation is not technically unique since low-voltage electronic meters are used to measure pressure, flow, and other variables when controlling the flow of flammable substances in industrial processes such as petroleum refineries and NASA launch facilities.<sup>20</sup> However, in the industrial environment, zoning regulations mitigate the damage that could be caused by a potential explosion by prohibiting the location of industrial plants near homes. AMI is unique due to the number of meters installed, and their proximity to our homes and businesses, which multiplies rather than mitigates the impact of any potential safety issues.

DRA recommends that PG&E explain the safety precautions taken in installing SmartMeter equipment in close proximity to natural gas equipment. This explanation should discuss all potential ignition mechanisms, including RF emissions from both gas and electric meters. It should describe specific state, national, and industrial standards which apply to SmartMeters, and how SmartMeters complied with them. PG&E's response should compare the laboratory conditions under which the meters were tested, to those experienced in actual SmartMeter installations. PG&E should also address the probabilistic impact of nearly 10 million meters dispersed throughout our neighborhoods and workplaces, compared to those installed in small numbers in secure or remote industrial sites.<sup>21</sup>

---

<sup>20</sup> Note that DRA does not know whether wireless communication via RF between meters and data acquisition and processing equipment is prevalent in these situations. Even if it is not, wired meters could also provide a source of ignition that would have to be considered.

<sup>21</sup> Once the Commission has made findings on these issues, it can consider whether it is appropriate to address specific issues with respect to all the current AMI deployments, not just PG&E's. A new rulemaking proceeding would be the appropriate procedural vehicle for such an inquiry.

**c) The Commission should review SmartMeter customer complaints to determine the prevalence and magnitude of interference from Smart Meters.**

The Application notes that the Structure Group reviewed 1,378 electric SmartMeter complaints as part of its investigation culminating in its September 2, 2010 report.<sup>22</sup> While questions about interference were not part of Structure’s scope of work, two of twenty customers interviewed “experienced electrical problems due to SmartMeters.”<sup>23</sup> The report further states that:

- There is a possibility for a meter in close proximity to FCC Part 15 Unlicensed Radio Frequency (RF) devices and transmitting data via a 1 watt radio transmitter to create operational interference (e.g., static, trip, or outage) when the RF signal passes through these devices.<sup>24</sup>

While static on a cordless telephone might be characterized a nuisance, false trips of garage door openers and motion sensors connected to security alarms could jeopardize the welfare of customers and their property. Thus, it is possible that SmartMeters generate “harmful interference” contrary to FCC regulations.

Based on the Structure Report’s limited finding that 10% of customers interviewed experienced electrical problems, DRA recommends a more detailed review of the data gathered by Structure Group, and any other complaints received after the investigators stopped gathering data on June 10, 2010.<sup>25</sup> The Commission might also consider ordering PG&E to explain the steps it took to limit interference from SmartMeters and how interference problems were resolved for customers who experienced such problems.

---

<sup>22</sup> See <http://www.cpuc.ca.gov/PUC/energy/Demand+Response/solicit.htm>.

<sup>23</sup> Id., p.202.

<sup>24</sup> Id., pp.202-203.

<sup>25</sup> Id., p.31.

### III. CONCLUSION

While CARE's claims regarding adverse impacts from SmartMeters are not supported by compelling evidence in this Application, the Commission would be remiss in its duty to ensure "safe and reliable" service if it did not solicit further evidence and perform an analysis. DRA recommends the Commission gather data related to RF health, safety, and interference. The Commission should review this data, with the participation of interested parties, before additional action is considered. It is very important that this review be conducted publicly. To fully address the concerns that have been raised, the Commission should ensure that accurate, non-biased, comprehensive, evidence-based data is gathered and used to support its findings. It may want to consider public outreach efforts to ensure that the Commission's findings and resolutions of RF issues restore public confidence in SmartMeters (if such confidence is warranted). Without that confidence, customer use of AMI as a tool for conservation and demand response may not be realized.

Respectfully submitted,

/s/ KAREN PAULL

---

KAREN PAULL  
Staff Counsel

Division of Ratepayer Advocates  
California Public Utilities Commission  
505 Van Ness Ave.  
San Francisco, CA 94102  
Phone: (415) 703-2360  
Fax: (415) 703-4432

October 20, 2010

**CERTIFICATE OF SERVICE**

I hereby certify that I have this day served a copy of the following document  
**RESPONSE OF THE DIVISION OF RATEPAYER ADVOCATES TO  
APPLICATION OF CALIFORNIANS FOR RENEWABLE ENERGY, INC.  
(CARE) TO MODIFY DECISION 06-07-027** to the official service lists in  
**A.10-09-012 and A.07-12-009** by using the following service:

**E-Mail Service:** sending the entire document as an attachment to all known parties of record who provided electronic mail addresses.

**U.S. Mail Service:** mailing by first-class mail with postage prepaid to all known parties of record who did not provide electronic mail addresses.

Executed on **October 20, 2010**, at San Francisco, California.

/s/ JAIME VADO  
\_\_\_\_\_  
Jaime Vado

**SERVICE LIST**  
**A.10-09-012, A07-12-009**

michaelboyd@sbcglobal.net  
mrw@mrwassoc.com  
cjw5@pge.com  
jwwd@pge.com  
cjn3@pge.com  
ehw2@pge.com  
kpp@cpuc.ca.gov  
tjs@cpuc.ca.gov  
sdpatrick@semprautilities.com  
mdjoseph@adamsbroadwell.com  
william.sanders@sfgov.org  
kpp@cpuc.ca.gov  
pfa@cpuc.ca.gov  
karpiak@rwglaw.com  
nsuetake@turn.org  
epoole@adplaw.com  
bkc7@pge.com  
cjn3@pge.com  
dbyers@landuselaw.com  
kpowell@loganpowell.com  
CCassman@abc-law.com  
Dana.Mcrae@co.santa-cruz.ca.us  
JBarisone@abc-law.com  
kpowell@loganpowell.com  
ajsmith@grunskylaw.com  
jhawley@technet.org  
mrw@mrwassoc.com  
julien.dumoulin-smith@ubs.com  
zango@zimmerlucas.com  
rmason@rwbaird.com  
wharrison@rwbaird.com  
RPrince@SempraUtilities.com  
klatt@energyattorney.com  
case.admin@sce.com  
janet.combs@sce.com  
CManson@SempraUtilities.com  
RGiles@SempraUtilities.com  
ericd@silverspringnet.com  
pwyrod@silverspringnet.com  
rkoss@adamsbroadwell.com  
austin.yang@sfgov.org  
theresa.mueller@sfgov.org  
srovetti@sflower.org  
tburke@sflower.org  
bfinkelstein@turn.org  
cjw5@pge.com  
DNG6@pge.com

KAF4@pge.com  
LDRi@pge.com  
rrh3@pge.com  
BKallo@rwbaird.com  
cem@newsdata.com  
CJGF@pge.com  
jmrb@pge.com  
saw0@pge.com  
regrelcpuccases@pge.com  
ehw2@pge.com  
SWF5@pge.com  
chris@emeter.com  
service@spurr.org  
rschmidt@bartlewells.com  
pforkin@daystartech.com  
jeff.francetic@landisgyr.com  
sandi@emfsafetynetwork.org  
JPereyda@Technet.org  
tvalderrama@technet.org  
rogerl47@aol.com  
bschuman@pacific-crest.com  
ag2@cpuc.ca.gov  
agc@cpuc.ca.gov  
bsk@cpuc.ca.gov  
ctd@cpuc.ca.gov  
cjb@cpuc.ca.gov  
crv@cpuc.ca.gov  
joc@cpuc.ca.gov  
kkm@cpuc.ca.gov  
lwt@cpuc.ca.gov  
zaf@cpuc.ca.gov  
mjd@cpuc.ca.gov  
rhd@cpuc.ca.gov  
wtr@cpuc.ca.gov  
scl@cpuc.ca.gov  
tcr@cpuc.ca.gov  
tjs@cpuc.ca.gov  
wmp@cpuc.ca.gov