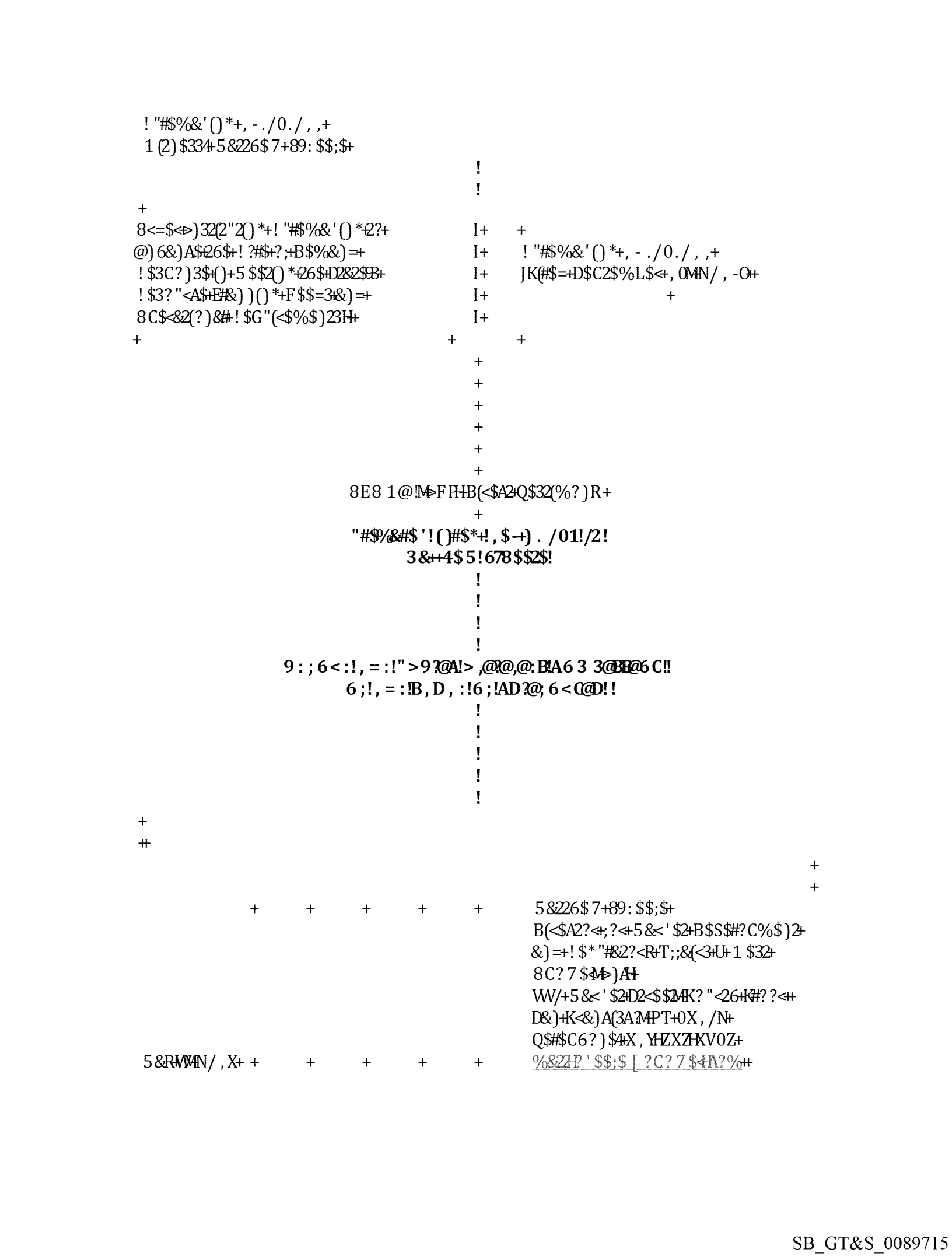

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Opower, Inc. (Opower) appreciates the opportunity to submit its opening comments pursuant to ordering paragraph two of the California Public Utilities Commission's (the Commission) rulemaking regarding demand response (DR) and Rules 1.9, 1.10, 1.13 and 6.2 of the Commission's Rules of Practice and Procedure.

I. Introduction

Opower delivers behavioral energy efficiency, DR, and customer engagement services to over ninety electric and gas utilities across thirty states and eight countries, including California. To date, these programs have saved over four terawatt-hours of energy.[1] This year Opower will deliver personalized energy usage insights to more than 22 million residential customers through paper mail, email, websites, smart phones, and text messages. Opower also implements communications and customer engagement for one of the largest peak-time rebate (PTR) programs in the United States.

Opower is pleased to respond to the issues laid out by the Commission in the Scoping Memo Addressing Phase Three of the Order Instituting Rulemaking to Enhance the Role of Demand Response in Meeting the State's Resource Planning Needs and Operational Requirements.[2] Opower's interest in this rulemaking is to encourage a greater focus on customer engagement to increase program load impact and overall participation in residential and small and medium business customers (collectively referred to as mass market customers) DR programs in California.

II. Responses to Questions in Testimony Guidance Document, Attachment A

Parties should provide recommendations for increasing individual demand response program load impacts and overall participation in demand response

[1] Four terawatt hours is equivalent to removing the city of San Francisco off of the grid for one year.

[2] R.13-09-011 *Joint Assigned Commissioner and Administrative Law Judge Ruling and Revised Scoping Memo Defining Scope and Schedule for Phase Three, Revising the Schedule for Phase Two, and Providing Guidance for Testimony and Hearings*, Attachment A.

programs. If parties consider the current demand response participation level to be appropriate, please explain why.[3]

A. Engaging mass market customers offers a significant opportunity to increase participation levels in DR programs and achieve higher levels of load reduction in the state.

In order to increase individual DR program load impacts and participation in DR programs, particularly those serving mass market customers, Pacific Gas & Electric, Southern California Edison, and San Diego Gas & Electric (collectively "the Utilities") should develop and implement strategies to improve mass market DR customer engagement. This response describes the components of a successful customer engagement strategy and how such a strategy should be employed to achieve improvements in program participation and individual load impact.

Mass market customers represent a significant opportunity for load reduction and load-shaping to enable variable renewable energy integration.[4,5] In its 2009 "National Assessment of Demand Response Potential", the Federal Energy Regulatory Commission ("FERC") found that California has one of the nation's largest DR potentials due to its high system peak demand.[6] Additionally, California's residential sector is the single largest driver of peak demand, and it will continue to grow in step with statewide population growth.[7] Therefore, it is unsurprising that FERC identified the residential sector as having the greatest "achievable" potential for peak reduction in the state.

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[3] *Id.*, at 1.

[4] *Potential Role of Demand Response Resources in Maintaining Grid Stability and Integrating Variable Renewable Energy under California's 33 Percent Renewable Portfolio Standard*, Navigant Consulting, Inc. at 4-15 (July 2012). Available at: http://www.calmac.org/publications/7-18-12_Final_White_Paper_on_Use_of_DR_for_Renewable_Energy_Integration.pdf

[5] *Id.,* at 8-1

[6] *A National Assessment of Demand Response Potential*. Federal Energy Regulatory Commission, at 91-92 (June 2009). Available at: http://www.ferc.gov/legal/staff-reports/06-09-demand-response.pdf

[7] *California Energy Demand 2010-2020 Adopted Forecast*, California Energy Commission, at 41 (May 2011). Available at: http://www.energy.ca.gov/2009publications/CEC-200-2009-012/CEC-200-2009-012-CMF.PDF

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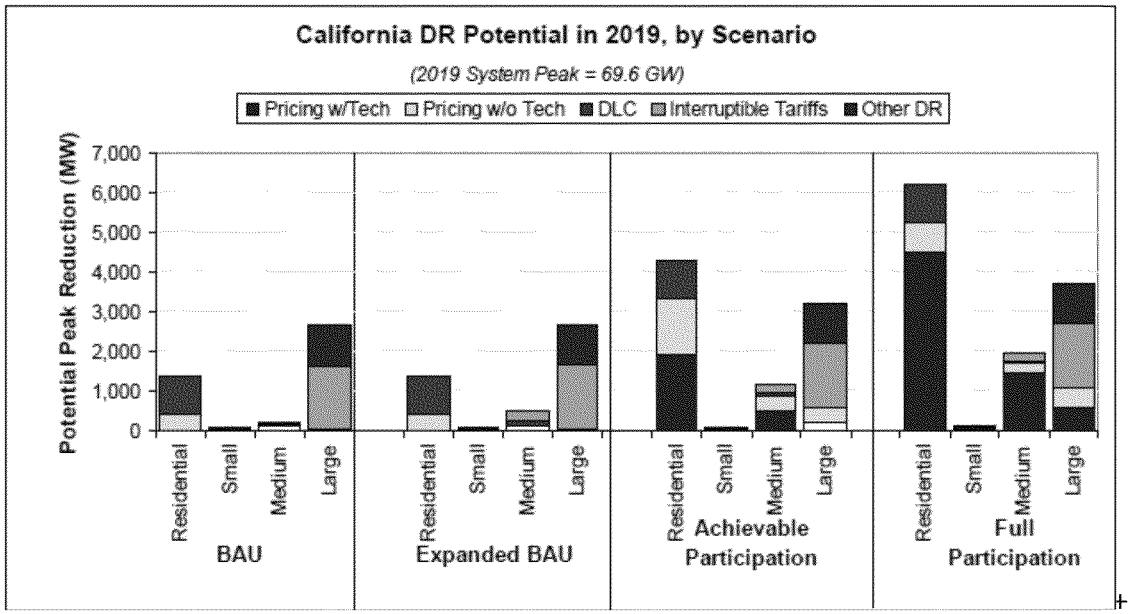

Source: Federal Energy Regulatory Commission, "A National Assessment of Demand Response Potential"

Despite the significant opportunity for residential peak reduction" including dynamic rate tariffs and direct load control ("DLC") programs" California faces hurdles in attaining achievable levels of customer participation and load reduction.[8] This is because a significant number of eligible mass market customers are not participating in DR programs. While some mass market customers are already being served with DR programs, many more customers are unaware of load reduction opportunities. It is necessary to deepen customer engagement efforts to increase awareness and demonstrate value of participation in such programs, and therefore foster greater load impact.

A successful customer engagement strategy should achieve two key goals:

1. Improve awareness and demonstrate the value of participation in DR programs, thereby increasing the overall rates of program participation; and
2. Enable customers to be proactive participants in DR programs, thereby increasing individual load impact.

[8] R.13-09-011 Order Instituting Rulemaking, at 9, where the Commission identified customer participation as one of five major challenges it faces in its DR programs.

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B. Personalized multichannel communications can readily supplement existing customer engagement strategies to improve mass market customer participation in DR programs.

While California's Flex Alerts program represents an important starting point for increasing awareness of DR programs among mass market customers, further efforts are required to improve program participation. The Flex Alert program – a mass market DR program administered by the California Independent System Operator ("CAISO") – engages customers by informing them about the importance of energy conservation during potential grid reliability emergencies. When CAISO issues a Flex Alert, customers are notified about the upcoming peak event through the broadcast media of television and radio, as well as opt-in messaging through email or text message. Flex Alert notifications demonstrate the value of customer engagement by educating customers about the importance of load reduction during system peaks and including tips to help customers manage their peak demand. However, the reach of Flex Alerts is limited by being general in the case of mass media messaging, and targeting customers already interested in the program in the case of opt-in alerts.

In order to foster increased awareness of DR programs, The Commission should encourage the Utilities to complement existing customer engagement efforts by employing personalized multichannel communications. Leveraging advanced meter data, data analytics, and multiple communication channels to deliver personalized communications facilitates messaging that is more likely to resonate with customers. Personalized messaging that is meaningful to customers can provide increased awareness load-reduction opportunities and coaching specific to each customer's consumption characteristics. Doing so fosters higher levels of participation in DR programs and increased load impacts.

C. Customer engagement strategies that use personalized communications across a broad base have been found to motivate mass market customers to participate in DR programs.

Focusing on customer engagement facilitates load impact by ensuring customers are aware of load reduction opportunities. Once engaged, customers are more likely to undertake load-reducing behaviors. For example, Baltimore Gas & Electric (□BGE□) deployed a PTR program that drove customer awareness by sending personalized communications prior to and following peak events. This focus on customer engagement contributed to a high degree of program awareness and participation.[9] Additionally over 82% of eligible customers earned a rebate by saving energy during a PTR event participation over the course of the summer of 2013.[10] Customer engagement contributed to the success of BGE□s PTR program by raising awareness and facilitating higher levels of participation and load reduction.

Employing personalized communications to engage customers increases the likelihood that they will participate in DR programs. Customers are more likely to respond to personalized communications that are relevant to their particular consumption and household characteristics. This link between personalized communications and greater levels of participation has been established through evaluations of mass market energy efficiency programs that target customer behavior.[11] Further, behavioral energy efficiency programs that engage customers directly have been shown to increase participation rates in other efficiency programs.[12] For example, evaluations of behavioral

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[9] *Connected Devices, Load Control and Behavioral Programs: BGE□s Program Design*, Baltimore Gas & Electric (April 2014). Available at: http://www.aceee.org/files/pdf/conferences/mt/2014/C3-Kiselewich.pdf

[10] Case No. 9208: In the Matter of Baltimore Gas and Electric Company for Authorization to Deploy a Smart Grid Initiative and to Establish a Surcharge Mechanism for the Recovery of Cost Third Quarter 2013 Metrics Report of Baltimore Gas and Electric Company (November 2013). Available at: http://webapp.psc.state.md.us/Intranet/Casenum/NewIndex3_VOpenFile.cfm?ServerFilePath=C:\Casenum\9200-9299\9208\\253.pdf

[11] *Behavior and Energy Savings: Evidence from a Series of Experimental Interventions*, Environmental Defense Fund, at 4□5 (2011). Available at: http://blogs.edf.org/energyexchange/files/2011/05/BehaviorAndEnergySavings.pdf

[12] See, for example: *Evaluation of Pacific Gas and Electric Company's Home Energy Report Initiative for the 2010-2012 Program*, Freeman, Sullivan & Company, at 31 (April 2013). Available at:

energy efficiency programs at San Diego Gas & Electric and Pacific Gas & Electric have found personalized outreach leads to rates of participation in both upstream and downstream efficiency measures.[13,14] An effective DR engagement strategy – one that employs personalized communication and reaches a broad customer base – can likewise motivate new customers to enroll in DR programs, thereby increasing program participation rates.

D. Pre- and post-event communications maximize individual program load impact.

In order to maximize individual program load impact, personalized communications should be delivered to customers both prior to and immediately following peak events. Focusing messaging around these key inflection points allows customers to maximize their DR contribution while maintaining acceptable levels of comfort.

Communications should be delivered:

1. Prior to a peak event, to notify customers of upcoming demand reduction opportunities and deliver personalized coaching on ways to reduce consumption; and
2. Following an event, to summarize demand reduction performance and communicate the benefits of peak load management.

Delivering these personalized communications at scale through multiple channels reinforces the importance of load reduction to the customers, encourages continued engagement in peak events, and facilitates increased load impact from DR programs.

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http://calmac.org/publications/2012_PGE_OPOWER_Home_Energy_Reports_4-25-2013_CALMAC_ID_PGE0329.01.pdf; and,
National Grid Residential Building Practices and Demonstration Program Evaluation: Final Results, DNV KEMA, at 3–7 (January 2014). Available at:
http://storage.pardot.com/17572/72784/kema_ngny_jan2014.pdf

[13] *Review of PG&E Home Energy Reports Initiative Evaluation*, DNV KEMA, at 3–3 and 5–3 (May 2013). Available at:
http://calmac.org/publications/PGE_Opower_v9.pdf

[14] *SDG&E Home Energy Reports Program: Savings Results*, DNV KEMA, at 1-2 (August 2013). Available at:
http://calmac.org/publications/SDGE_Opower_Report_-_Final.pdf

E. Personalized messaging creates a feedback loop that enables utilities to collect data in order to improve DR program offerings.

Higher levels of customer participation in DR programs benefit the Utilities by enabling continuous program improvement. Employing personalized messaging to engage customers creates an information feedback loop between the Utilities and DR program participants. Using advanced analytical software to examine how customers are responding to pre- and post-event communications provides a more complete picture of customer behavior that can inform future program design. For example, analytics can help identify if customers are dissatisfied with aspects of current DR program offerings, facilitating program improvements.

Continuous program improvement drives three key outcomes:

1. Greater load reduction by honing in on customer motivations to increase program effectiveness;
2. Improved program satisfaction and reduced participant opt-outs by identifying and addressing the causes of poor customer experiences; and
3. Increased participation by attracting new customers to programs via optimized program outreach tactics.

Optimizing programs to meet customer needs increases the likelihood that customers will participate in other DR programs, helping the state meet broader peak reduction objectives.

F. Customer engagement strategies can similarly improve the load impact of Direct Load Control programs.

The Commission should encourage the Utilities to implement similar customer engagement strategies with DLC programs to improve load impact. Greater adoption of DLC programs that incorporate a customer engagement facet can elicit higher levels of awareness of load reduction opportunities, and therefore participation. Installed measures that can involve the customer directly provide a better experience for customers. For example, a programmable communicating thermostat paired with a mobile application that provides event details (e.g., when a peak event will end) and tips for maintaining comfort are more likely to motivate customers to participate.

Minimizing negative customer experiences is an equally important means of facilitating continued participation. The Commission should require DLC devices to utilize two-way communication to protect potential load impact from individual DLC device failure.[15] Technical difficulties with DLC devices can lead to a poor customer experience, which may reduce the likelihood of participation in peak events, and therefore reduce load impact. Ensuring devices are performing as designed facilitates a better customer experience, higher satisfaction with DLC programs, and greater likelihood of participation in other DR programs. Further, two-way communication allows utilities to pinpoint faulty devices remotely, thereby lowering program costs and increasing overall program cost-effectiveness.

Parties should provide recommendations for developing the goals of demand response load (MW) and demand response participation, how those goals should be measured (load impact protocol based on ex post or ex ante, or others), and how often they should be measured to ensure goal achievement (monthly, seasonally, or annually).[16]

G. Demand response participation goals should be set to encourage aggressive improvement in participation levels.

The Commission should create participation goals that use current participation levels as the baseline, with aggressive incremental participation improvement goals. Ambitious, incrementally increasing goals incentivize development of programs that effectively engage mass market customers, which in turn can facilitate increased load impact. Goals should be measured by the number of households meaningfully reducing demand during peak events. This process facilitates participation goals that encourage the Utilities to increase participation rates in new and existing opt-in DR programs (such as dynamic rate tariffs, smart thermostats that incorporate load cycling, DLC, etc.).

[15] *The Business Case for DLC Replacement White Paper*, Silver Springs Networks, at 4 (September 2013). Available at: http://www.silverspringnet.com/pdfs/whitepapers/SilverSpring-Whitepaper-BizCaseForReplacingLoadControlSwitches.pdf

[16] R.13-09-011 *Joint Assigned Commissioner and Administrative Law Judge Ruling and Revised Scoping Memo Defining Scope and Schedule for Phase Three, Revising the Schedule for Phase Two, and Providing Guidance for Testimony and Hearings*, Attachment A at 1.

Increased program participation will likely lead to increased aggregate load impacts, allowing the state to meet long-term grid reliability and renewable integration goals.

III. Conclusion

The Commission has an opportunity to improve value delivered to ratepayers by encouraging the Utilities to focus on customer engagement to increase participation in and load impacts from DR programs. Creating aggressive, incrementally increasing DR participation goals based on the number of households meaningfully reducing peak demand encourages the Utilities to address mass market customers who are not currently participating in DR programs. The state's long-term goals grid reliability goals can be met by serving mass market customers with more engaging, effective DR programs.

IV. Witness Qualifications

My name is Matthew O'Keefe. My business address is 760 Market Street in San Francisco, California. I work for Opower, Inc. where I serve as the Director of Market Development and Regulatory Affairs for Western North America. I hold a bachelors degree in International Affairs from The George Washington University and Masters of Public Policy from University of California, Los Angeles. At Opower, I am responsible for managing and executing the company's regulatory and policy strategy in the western United States and Canada. In this role, I work with Opower's engineering and business experts to develop and guide the company's perspective on matters including, but not limited to, energy efficiency, demand response, customer engagement, and the smart grid. Prior to joining Opower, I worked at the California Energy Efficiency Industry Council where I worked with leaders of energy efficiency businesses, investor-owned utilities, and regulatory bodies to expand and stabilize the market for efficiency-focused companies. Prior to my work at the Efficiency Council, I held various positions in municipal government, non-profits, politics, and education.

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Insofar as this testimony contains material that is factual in nature, I believe it to be correct. Insofar as this testimony contains matters of opinion or judgment, it represents my best judgment.

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Dated: May 6, 2014

Respectfully submitted,

/s/ Matthew O'Keefe

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