Decision 15-09-022 September 17, 2015

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Create a Consistent Regulatory Framework for the Guidance, Planning, and Evaluation of Integrated Demand Side Resource Programs.	Rulemaking 14-10-003 (Filed October 2, 2014)

DECISION ADOPTING AN EXPANDED SCOPE, A DEFINITION, AND A GOAL FOR THE INTEGRATION OF DISTRIBUTED ENERGY RESOURCES

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DECISION ADOPTING AN EXPANDED SCOPE, A DEFINITION, AND A GOAL FOR THE INTEGRATION OF DISTRIBUTED ENERGY RESOURCES

Summary

This decision establishes a foundation for this proceeding and for the integration of demand-side resources, which, as we explain below, we now refer to as the integration of distributed energy resources. We first confirm that this proceeding is extensively intertwined with that of Rulemaking (R.) 14-08-013, the Distribution Resources Plan proceeding. We determine that our intention in this proceeding is to focus on the integration of distributed energy resources[1] (i.e., collective action to optimize distributed energy resources) versus integrated demand-side management (i.e., programs and services offered by the utility to the customer).

In order to set a strong foundation for this proceeding, we adopt a definition of the integration of distributed energy resources:

- A regulatory framework that enables customers to effectively and efficiently choose from an array of distributed energy resources. The framework is based on the impact and interaction of such resources on the grid as a whole, on a customer's energy usage, and on the environment.

We then adopt a goal for the integration of distributed energy resources:

- To deploy distributed energy resources that provide optimal customer and grid benefits, while enabling California to reach its climate objectives.

This decision also confirms the scope of this proceeding to be broader than originally anticipated in the Order Instituting Rulemaking 14-10-003. As

[1] This proceeding uses the same categories of distributed energy resources as those in R.14-08-013. *See February 6, 2015 Assigned Commissioner Ruling in R.14-08-013.*

described in this decision, the scope will consider a framework based on the entire energy production and delivery system from the customer side to the utility side. The scope of this proceeding will make a determination on how best to source the distributed energy resources needed by the utilities based on the determinations made in R.14-08-013, i.e., value of distributed energy resources. Finally, this proceeding will also consider the issue of localized incentives, which was not anticipated when we established the rulemaking but arose in workshop discussions.

This proceeding remains open to support the development of an end-to-end framework for integrating distributed energy resources, including relevant valuation methodologies and sourcing mechanisms.

1. Procedural Background

On October 2, 2014, the Commission approved the Order Instituting this Rulemaking (OIR), which sought to consider the development and adoption of a regulatory framework to provide policy consistency for the direction and review of demand-side resource programs. The intention of the rulemaking is to consider how to best enable the utilities, other administrators, and electric market actors to offer a wide portfolio of demand-modifying technologies best tailored to the specific characteristics of individual customers. Additionally, the proceeding seeks to identify and reduce or eliminate existing barriers to providing customers with tailored demand-side management solutions.

The OIR identifies the California Long-Term Energy Efficiency Strategic Plan (Strategic Plan) and the 2010-2012 Omnibus Integrated Demand Side Management Process Evaluation (Omnibus Report), two important documents in the development of integration efforts at the Commission. In the Strategic Plan adopted by the Commission in 2008, a chapter dedicated to integrated

demand-side management emphasizes a dual focus on utilities and customers. The Strategic Plan states that current integration efforts do not maximize energy savings nor minimize costs of program delivery and that the Commission should integrate demand-side programs within its jurisdiction in order to enable offerings of integrated packages to maximize savings and efficiencies of utility program overhead.[2] The Omnibus Report, a third-party evaluation of efforts to integrate demand-side management programs, presented several barriers to integration and suggested several recommendations including the need to establish a forum to integrate load planning activities.[3]

Pacific Gas and Electric Company (PG&E), San Diego Gas & Electric Company (SDG&E), Southern California Edison Company (SCE) and Southern California Gas Company (SoCalGas)[4] (referred to jointly herein as the Utilities) are respondents to this rulemaking. Interested parties were invited to file comments to the OIR on November 7, 2014. Replies to those comments were filed on November 21, 2014.

Following a December 5, 2014 prehearing conference, the assigned Commissioner and Administrative Law Judge jointly issued a Ruling and Scoping Memo (January 5, 2015 Scoping Memo) setting a tentative scope but acknowledging that more information needed to be gathered prior to determining whether the scope of the proceeding should be narrow, e.g., focusing on energy efficiency and demand response only, or broad, e.g., integration of demand-side management into system planning. Hence, the

[2] Strategic Plan, September 2008 at Chapter 8.

[3] OIR 14-10-003 at 9.

Administrative Law Judge (ALJ) facilitated a series of events designed to educate parties on aspects of the proceeding.

Subsequent to two learning sessions held in January and February[5] and a workshop in March, a Ruling was issued on April 15, 2015 asking parties to provide comments on several aspects of this proceeding. Parties filed comments on May 15, 2015[6] and reply comments on May 29, 2015.[7]

2. Overview of April 15, 2015 Post-Workshop Ruling

The April 15, 2015 Post-Workshop Ruling provided an overview of the March 11-12, 2015 workshop (March Workshop or Workshop). The objectives of the Workshop were to develop ideas for a) defining the integration of demand-side resources, b) determining the problems with current integration efforts, and c) shaping a goal for integration. The Post Workshop Ruling then posed several questions to the parties, focusing on definitions, a goal, and the

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[4] During the prehearing conference, SoCalGas was identified and named as a respondent to this proceeding, correcting an inadvertent omission in the OIR 14-10-003.

[5] Learning Session I, held on January 22, 2014, included an overview of outcomes of Commission-regulated integration activities, an overview of related proceedings, current and past integration activities, and a panel on barriers to success. Learning Session II, held on February 20, 2015, included an overview of California climate goals, an overview of out-of-state integrated demand side resource program activities, and a panel discussion on customer needs.

[6] Parties filing comments are the California Energy Storage Association (CESA), Customer Federation of California (CFC), California Independent System Operator (CAISO), Center for Sustainable Energy (CSE), Karey Christ-Janer, Clean Coalition, EnergySavvy, Environmental Defense Fund (EDF), Local Government Sustainability Environmental Council/San Francisco Bay Area Regional Energy Network (SFBayREN), Marin Clean Energy (MCE), Natural Resource Defense Council (NRDC) jointly with Sierra Club, Office of Ratepayer Advocates (ORA), PG&E, SDG&E, Solar City, SCE, SoCalGas, Southern California Regional Energy Network (SoCalRen), The Utility Reform Network (TURN), and VoteSolar.

[7] Parties filing Reply Comments are CESA, CFC, CAISO, CSE, Karey Christ-Janer, Clean Coalition, EnergySavvy, EDF, Local Government Sustainability Environmental Council/SFBayREN, MCE, NRDC jointly with Sierra Club, ORA, PG&E, SDG&E, Solar City, CSE, SoCalGas, SoCalRen, TURN, and VoteSolar.

breadth of the proceeding. The Post-Workshop Ruling is attached as Appendix A, but we provide a sample of the questions here:

- If the Commission selects one goal for the integration of demand-side resources, what should that goal be?
- Some of the definitions, goals, and objectives suggested by parties imply that the effective integration of demand-side resources requires demand-side resources to be better integrated with utility system planning, investment, and operation, as well as CAISO planning and operations. Is this correct? Do you agree? Should this broad challenge be addressed in this proceeding? Why and how?
- If identified as an objective of this proceeding, how should system planning and benefits be considered in a way that does not duplicate what is being considered in the distribution resources plans (or long-term planning process) proceedings?
- Should policies supporting the integration of demand-side resources maximize system benefit, including greenhouse gas reductions, maximize customer participation and benefits, or some combination of the two? In the integration of demand-side resources, how can we harmonize the needs and wants of customers with system needs, including greenhouse gas reductions? Should financial benefits and/or customer incentives for the integration of demand-side resources be uniform across the state and/or service territory or differentiated by locational value?
- Should the Commission shift from the current framework of encouraging the integration of demand-side resources through individual customer revenue streams from bill reductions and utility incentive payments to a different framework in which those benefit streams can be commoditized (bought and sold) to meet system needs (e.g., MW, MWh, flexible resource adequacy, greenhouse gas reductions)? Should the Commission create an open procurement or similar framework through which the integration of demand-side resources meets system needs? How can such a framework reflect customer needs, wants and benefits? How can such a framework encourage integrated customer actions?

- How can the long run benefits of distributed energy resource investments be monetized and captured in an environment where ownership and occupancy of residential and commercial buildings changes in a much shorter time frame than the life cycle benefits of those investments?
- How can the various benefits of distributed energy resource investments that are considered in a complete cost-effectiveness evaluation be converted into financial benefits that flow to those who finance such investments (which may or may not include onsite customers receiving the energy service)?
- Is it important that any framework that emerges from this proceeding encourages third parties or utilities to deliver, and customers to take, integrated packages of technologies, at the same or within a limited time frame? How important is this (i.e., integrated demand-side management or actions) as compared to the integration of demand-side resources into system planning, etc., as discussed above? Should this proceeding take up both issues? Why or why not?

3. Discussion

Below, we explain the complementary roles of this proceeding, Rulemaking (R.) 14-10-003, and the Distribution Resources Plans proceeding (R.14-08-013), and our intention in this proceeding to focus on the integration of distributed energy resources broadly defined. In order to establish a strong foundation for this proceeding, we adopt a definition and a goal for the integration of distributed energy resources. Furthermore, we confirm the scope of this proceeding to be broader than originally anticipated in the OIR. As further described below, the scope will be broad in order to create a regulatory framework that looks at the entire energy production and delivery system and includes a determination of how best to source the distributed energy resources needed by the utilities based on the determinations made in R.14-08-013.

Additionally, the scope of this proceeding is expanded to consider whether the Commission should adopt localized incentives.

3.1. The Connection between the Distribution Resources Plans and the Integration of Distributed Energy Resource Proceedings

The Commission initiated the Distribution Resources Plan proceeding, R.14-08-013, to establish policies, procedures, and rules to guide regulated energy utilities in developing their proposals required by Public Utilities Code Section 769. The goal of these proposals is to move a utility toward a fuller integration of distributed energy resources into its distribution grid planning, operations and investment. As further explained below, R.14-10-003 will not duplicate these efforts. Rather, the two proceedings will work together to create an end-to-end framework from the customer side to the utility side of the grid, with this proceeding implementing Section 769(b)(2) and Section 769(b)(3) as part of that framework, including:

- the identification of tariffs, contracts, or other mechanisms for the deployment of cost-effective distributed resources, (*Section 769(b)(2)*); and
- cost-effective methods of effectively coordinating existing commission-approved programs, incentives, and tariffs to maximize the locational benefits and minimize the incremental costs of distributed resources (*Section 769(b)(3)*).

As captured in the January 15, 2015 Scoping Memo, discussions during the prehearing conference indicated diverse opinions regarding the scope of this proceeding. Some parties suggested that the scope focus solely on improved integration of the traditional demand-side programs of energy efficiency and demand response. Other parties recommended that the Commission take the opportunity to address a broader scope that would cover any gaps not currently covered by the Distribution Resources Plan, including aspects of grid planning.

Hence, the March Workshop and the Post Workshop Ruling attempted to address this diversity and assist the Commission in determining how narrow or broad the scope of R.14-10-003 should be.

At the Workshop, parties re-initiated the subject of the Distribution Resources Plans proceeding and discussed the connection between the two proceedings. In the Post Workshop Ruling, parties were asked questions regarding the R.14-08-013 as well as system planning. Parties generally agree that either proceeding should require better integration with grid planning. However, parties remain divided as to whether or not this proceeding should investigate this broader aspect of integration.

SDG&E, SCE, and SoCalGas concur that effective integration of demand-side resources requires better integration with grid needs and grid operations. However, these three parties contend that other proceedings, such as R.14-08-013, are currently considering how best to incorporate distributed energy resources into grid planning.

Other parties envision this proceeding as an opportunity to fill a gap in system planning. Sierra Club and NRDC agree that R.14-08-013 will consider integrating system planning, but these two parties also maintain that connections to planning, operations and investment need to be made in R.14-10-003 to ensure coordination and the capture of all available system resources.[8] Christ-Janer suggests that while locational values will be determined in R.14-08-013, the implementation of those values should be explored in this proceeding.[9] Offering further demarcation, CSE contends that R.14-10-003 should assign roles and

[8] Sierra at 12.

[9] Christ-Janer at 10.

responsibilities for procurement of distributed energy resources, market transformation, and ensuring that sufficient resources will be deployed on time to displace other investments. Furthermore, CSE considers this proceeding to be able to identify mechanisms to displace the need for traditional investments five to ten years in the future.[10]

In our review of the OIRs establishing this proceeding and R.14-08-013, we acknowledge overlap between the two proceedings, but we also conclude that there is a clear demarcation between the two. The purpose of R.14-08-013 is to move the utilities toward a "more full integration of distributed energy resources into their distribution system planning, operations and investment."[11] Thus, in R.14-08-013, the Commission will delineate the distribution system needs and how those needs can be optimally provided by distributed energy resources. The Commission will also determine through the development of Locational Benefit Analyses the value of the distributed energy resources attributes required to provide those needs. Furthermore, Public Utilities Code Section 769 identifies the items to be included in each of the utilities' Distribution Resources Plans. One of those items is the identification of tariffs, contracts or other mechanisms for the deployment of cost-effective distributed resources, (*see Section 769(b)(2)*). A second item is cost-effective methods of effectively coordinating existing commission-approved programs, incentives, and tariffs to maximize the locational benefits and minimize the incremental costs of distributed resources (*see Section 769(b)(3)*).

[10] CSE at 11.

[11] OIR 14-08-013 at 4.

Comparably, the purpose of this proceeding is to develop a framework to enable a wide portfolio of distributed energy resources. Hence, R.14-10-003 can and should create the framework to determine how the resources, which are needed to fill the required characteristics and values developed in R.14-08-013, could be sourced. Additionally, this proceeding should determine how to implement the tariffs, contracts and other mechanisms proposed in R.14-08-013. We surmise that future pilots, expected to be developed in a subsequent phase of this proceeding, could test how best to integrate and procure resources to fit the characteristics needed or the means by which these go to the market.

We confirm the scope of this proceeding to be broader than originally anticipated in the OIR. Accordingly, the scope is revised to add that the Commission will determine how the distributed energy resources needed will be sourced, and signal our intention to proceed in parallel with R.14-08-013.

In their Opening Comments on the Proposed Decision, PG&E recommends that we clarify that this proceeding will defer to the locational net benefits methodologies in the utilities' approved Electric Distribution Resource Plans in R.14-08-013. We acknowledge the work underway and confirm an intention to make only complementary determinations in this Rulemaking. At the same time we emphasize that the work of R.14-08-013 and this Rulemaking will not occur sequentially, but rather in parallel. Further detail in this regard will become clear as both proceedings develop.

3.2. Distinguishing the Integration of Demand-Side Management from the Integration of Demand-Side Resources

Because of two specific problems with current integration efforts highlighted by the parties, the Commission intends to focus on the integration of distributed energy resources in this proceeding as opposed to integrated

demand-side management. These two problems are: 1) distributed energy resources do not adequately impact system planning, investments and operations; and 2) current integration efforts do not address grid needs. As discussed in detail below, the regulatory framework eventually created in this proceeding will take into consideration the impact and interaction of such resources on the grid as a whole as well as on an individual customer's energy usage and the environment.

During the March Workshop, participants discussed several problems with current integration efforts, as indicated by a staff handout (*See* attached Post-Workshop Ruling). The workshop participants then provided several additional problems and prioritized them (Table 1).

TABLE 1 **Most Important Problems with Current Integration Efforts**
1. Market Failure of Revenue Streams
2. Lack of Access to Data
3. Demand-side Resources do not Adequately Impact System Planning, Investments and Operations
4. Current Efforts do not Address Grid Needs
5. Current Efforts are too Focused on Rate-based versus Performance-based
6. Current Efforts are not Forward-looking
7. Integration is Divorced from Ratemaking

The Post-Workshop Ruling asked parties to comment on the workshop prioritization. Our review of the comments indicates that parties generally agree with the final prioritization of problems with two caveats: 1) the Utilities assert

that the problems are being addressed in other proceedings;[12] and 2) some parties argue that access to data should be at the top of the list.[13]

We also note a recommendation by CAISO, NRDC, Sierra Club, and VoteSolar to subgroup the problems with the top priority being System Needs, a combination of items 1, 3 and 4 from Table 1.[14] The Omnibus Report (as discussed in the OIR) underscored the need to establish a forum to integrate comprehensive load planning activities. The OIR stated that the Commission would consider how to develop demand-side management assumptions for long-term resource planning in coordination with the Long-Term Procurement Plan proceeding.

We concur that many issues regarding grid planning are being addressed elsewhere, including R.14-08-013, but we conclude that the Commission should ensure that the potential overlap and interactions between the two proceedings are being addressed. While a minority of parties in this proceeding would have the Commission narrow the breadth of this proceeding to focus solely on the concept of integrated demand-side management, the Commission recognizes the importance of the interaction between the ongoing proceedings but should understand those interactions. Public Utilities Code Section 769 and R.14-08-013 require that distribution grid planning be informed by distributed energy resources, including choices made by customers. Here we acknowledge that the

[12] PG&E, SDG&E, SCE, and SoCalGas assert that many, if not all, of the problems listed in the final prioritization are being addressed elsewhere and the Commission should instead focus on developing customer-facing tools in this proceeding.

[13] *See* comments from CFC, Greenlining and CforAT.

[14] The other two priorities suggested are access to data and current efforts are not forward-looking.

inverse is also true: customer choice should be informed by the impact of those choices on the electrical grid's needs. In giving the OIR breadth, we recognize the interplay, accept that it will be an increasingly important part of California's clean energy future, and resolve to create an end-to-end framework for distribution systems and distributed energy resources, which reflects both the challenges and opportunities therein.

Accordingly, the Commission will broaden the scope of this proceeding beyond looking at solely what the utilities offer customers (integrated demand-side management) and commit to also focus on what customers offer the utility (integration of distributed energy resources). As the Coalition of California Utility Employees (CUE)[15] points out, this expands the complexity and weight of the endeavor. We acknowledge as much and will prioritize as necessary.

3.3. Adopted Definition

In this section, we first confirm that the integration of demand-side management is what the utilities and others offer to customers, and the integration of distributed energy resources is the collective action of customers, the Commission, the Utilities, the CAISO, etc. to optimize distributed energy resources to the extent possible. As further discussed below, we adopt the following definition for the integration of distributed energy resources:

> A regulatory framework developed by the Commission to enable utility customers to effectively and efficiently choose from an array of distributed energy resources, taking into consideration the impact and interaction of such resources on

[15] CUE Opening Comments on the Proposed Decision at 2-3.

> the grid as a whole, the individual customer's energy usage, and the environment.

The OIR discusses the efforts of the Commission to integrate demand-side energy solutions and concludes that the efforts have had limited success. The Omnibus Report states that the definition of integrated demand-side management is not concrete. Without a clear description, it is difficult to achieve true integration. Our aim in this decision is to adopt a definition and a goal to lead toward a solution that will address the problems with current integration efforts, as identified at the March Workshop.

During the March Workshop, participants discussed several aspects of integration, which led to the development of nine group definitions for the integration of demand-side resources. We first explain, that for consistency sake and for better coordination with R.14-08-013, we will replace the term demand-side resources with the term distributed energy resources and use the same definition as in that proceeding: distributed energy resources are distributed renewable generation resources, energy efficiency, energy storage, electric vehicles, and demand response technologies. In reviewing the nine definitions developed in the March Workshop,[16] we found many similarities, most notably an emphasis on the customer. Also consistent in the nine definitions was a reference to a framework, tool, or solution.

The Post-Workshop Ruling asked parties to confirm and, if necessary, refine their definition of integration. To ensure clarity amongst the parties, the Ruling explained that the Commission considers integrated demand-side management as something the utilities or third parties offer to customers

[16] *See* the Post-Workshop Ruling, which provided a list of the nine definitions.

whereas integrated distributed energy resource actions or behaviors are something customers do. We add here that integrated distributed energy resources actions or behaviors also include the actions of the Commission, the Utilities, and the CAISO.

Parties were asked to comment on whether the concepts of "integration of demand-side resources" and "integrated demand-side management" are distinct concepts that should be defined separately for use in this proceeding. Most parties agree that the integration of demand-side resources and integrated demand-side management are two distinct concepts.[17] CAISO offers the following explanation of the differences: the first concept refers to the integration of distributed energy resources into the operations and planning of the electric system and the second concept refers to the formation of combined, demand-side or customer-side solutions for meeting a specific customer need or impacting the shape of a load. CAISO suggests that the latter concept be kept but expanded to consider resource combinations such as demand-side and utility-side distributed energy resources.[18] CAISO concludes that integrated distributed energy resources provide greater value to the grid and the customer than stand-alone resources.

TURN points out that several parties suggest that a narrow view of integrated demand-side management is too limited to form the basis of a proceeding that will effectively complement the Distribution Resources Plan

[17] *See*, for example, CSE Opening Comments at 2-3; Christ-Janer Opening Comments at 2; CFC Opening Comments at 2; EDF at 2-3; Greenlining/CforAT at 1-2; MCE at 2; ORA at 2-3; SCE at 3-6; SoCalGas at 2-3; and SoCalREN at 3-4.

[18] CAISO Opening Comments at 7-8.

proceeding.[19] PG&E contends that both terms have been used interchangeably and that the Commission should focus its efforts on defining integrated demand side management.[20] But PG&E adds in its reply comments that ultimately, the definition of integrated demand-side management needs to be flexible to remain relevant in a quickly changing environment.

In developing a definition, we return to our previous statement that the integration of demand-side management is the policy and program framework that the Commission, the Utilities, and others offer to customers and the integration of distributed energy resources is the collective action of customers, the Commission, the Utilities, the CAISO, etc. to optimize these resources to the extent possible.

We consider the integration of distributed energy resources to be additive to integrated demand side management and, while both are in the scope for this proceeding, our emphasis will be on the integration of distributed energy resources. We find that a narrow view is too limited to form the basis of a proceeding that will effectively complement the Distribution Resources Plan proceeding. Thus, we revise our original use of demand-side resources to be distributed energy resources, including resources on the grid side of the customer's meter, anywhere within the Commission's jurisdictional (low-voltage and sub-transmission) distribution system.[21]

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[19] TURN Reply Comments at 4 citing CAISO Opening Comments at 2, EDF Opening Comments at 2, Sierra Club and NRDC Opening Comments at 3 and CSE Opening Comments at 2-3. *See also* Christ-Janer Opening Comments at 2-3, Consumer Federation of California at 2, and MCE at 2.

[20] PG&E Opening Comments at 3-4.

[21] R.14-08-013, February 6, 2015 Assigned Commissioner Ruling at 9.

With this in mind, and taking into account the emphasis of party's definitions on a framework and the customer, we adopt the following definition of the integration of distributed energy resources:

> A regulatory framework, developed by the Commission, to enable utility customers to most effectively and efficiently choose from an array of distributed energy resources taking into consideration the impact and interaction of such resources on the grid as a whole, individual customer's energy usage, and the environment.

3.4. The Adopted Goal of the Integration of Distributed Energy Resources

As further explained below, we adopt the following goal for the integration of distributed energy resources:

> To deploy distributed energy resources that provide optimal customer and grid benefits, while enabling California to reach its climate objectives.

As was described during the March Workshop, a goal is broad, generic, long-term and not strictly measureable or tangible. During the course of the two-day workshop, parties discussed many aspects of integration to help them form a goal for the Commission to adopt. We find that a single overarching goal will promote the concept of integration and help the Commission, the Utilities, customers and third party distributed energy resource providers focus their efforts. In comments to the Post Workshop Ruling, parties offered overarching goals as indicated in Table 2.

TABLE 2 RECOMMENDED OVERARCHING GOALS	
Party	Goal
CAISO	Avoid the procurement of supply resources for the benefit of the customers and grid.
Christ-Janer	A successful, coordinated, robust, effective effort gaining widespread market visibility, adoption and acceptance.
Comverge	Maximizing value for all customers and the utility.
EDF	Ensuring customer, distribution, and system value.
Greenlining/CforAT	Reliable, affordable and efficient clean energy, AND promote participation and coordination to provide comprehensive solutions to meet the needs of all customers, the environment and the grid.
LGSEC/SFBayREN	Reduction of greenhouse gas emissions
MCE	Reduction of greenhouse gas emissions
PG&E	Reduction of customer energy costs and greenhouse gas emissions.
SDG&E	The addition of value to the system through lower total costs, reaching strategic goals, and alignment of customer and system benefits.
Sierra Club/NRDC	Meet energy system needs and properly value reductions in greenhouse gas emissions to achieve California's climate goals.
SolarCity	Accelerate the contribution of distributed energy resources to meet California's clean energy policies
SCE	Improve the ability of customers and system planners to use resources in order to maximize customer, grid, and environmental benefits.
SoCalGas	Reduction of greenhouse gas emissions.
SoCalREN	Optimum long-term benefits for customers, reliable and safe clean energy resources for the grid, the reduction of greenhouse gases.
VoteSolar	Decreased costs and increased customer benefits

Two themes emerge in these recommended goals: 1) improving customer and system or "grid" benefits; and 2) attaining California's environmental goals. Taking these two themes into account as well as our approach to look at the system holistically, we merge the various options and adopt the following goal for the integration of distributed energy resources:

> To deploy distributed energy resources that provide optimal customer and grid benefits, while enabling California to reach its climate objectives.

In comments on the Proposed Decision, the California Energy Efficiency Industry Council (Council)[22] point out a tension between providing optimal customer and grid benefits and maximizing customer participation. We acknowledge the existence of that tension and will consider it in this proceeding. Our goal refers to the need for distributed energy resources to provide "optimal customer and grid benefits." By this we consider distributed energy resources as serving both customer *and* grid needs and that an active optimization process is needed to accomplish that. Such an active optimization process may be in conflict with maximizing distributed energy resource uptake. Exploring whether such a conflict exists and, if so, how proceed will be a key part of developing an end-to-end framework for integrating distributed energy resources.

3.5. Expanding the Scope to Include Whether and How to Create and Offer Local Incentives

An unanticipated issue emerged during the workshop discussion; that of creating localized incentives. We conclude that the Commission should review how we shape incentives for investments in distributed energy resources and

[22] Council Opening Comments on Proposed Decision at 3-4.

consider the implications of rewarding incentives based on where the resources are located. As discussed more in depth below, the Commission will review whether we should continue our traditional method of equalized incentives for all customers, no matter their location, and weigh the pros and cons of emphasizing localized incentives versus emphasizing across-the-board customer participation.

In the Post Workshop Ruling, parties were asked two related questions. First, whether policies supporting the integration of distributed energy resources should maximize grid benefits or maximize customer participation. Second, whether incentives for the integration of demand-side resources should be uniform across the state or differentiated by locational value.

Generally speaking, the parties argue that policies can support both system benefits and customer benefits, but not necessarily customer participation.[23] In fact, EDF contends that attempts to maximize customer participation would result in lower aggregate customer benefits than could be achieved by geographically-targeted approaches.[24] SCE and EDF suggest that the Commission consider how to optimize customer participation in a manner that maximizes customer and system benefits rather than how to maximize customer participation regardless of cost-effectiveness or most effective means of greenhouse gas reduction.[25] [26] Similarly, Sierra Club and NRDC point out that the success of this proceeding should not be measured by the number of

[23] CFC Opening Comments at III, Clean Coalition Opening Comments at 6, and SoCalREN Opening Comments at 10.

[24] EDF Opening Comments at 12.

[25] SCE Opening Comments at 13.

[26] EDF Opening Comments at 12.

customers participating in demand-side programs but by the impact the resources have on the energy system as a whole in terms of cost, reliability, and climate goals.[27]

Parties contend that a harmonization between grid and customer benefits is required in the integration of distributed energy resources. Furthermore, in crafting incentives, the Commission should reflect both system wide and locational benefits.[28] PG&E states that uniform incentives are not optimal to ensure both customer and system benefits.[29] PG&E argues that program administrators should retain flexibility to craft incentive levels for location and customer-specific value to maximize the value of integration to both customers and system planners.[30] SCE explains further that you can have both: if a certain resource meets a local system need, these could be compensated locationally through a new method developed in this proceeding. Other resources not meeting local system need should be compensated in a more uniform methodology across the service territory.[31]

We agree that there is a need for harmonization between grid and customer benefits in the integration of distributed energy resources. We also find that incentives should reflect both grid-wide and locational benefits. The Commission recognizes a need to review this aspect of incentives, something that had not originally been conceived in this proceeding. Hence, we expand the scope of this proceeding to consider whether the Commission should adopt

[27] Sierra Club/NRDC at 14.

[28] Sierra Club/NRDC at 14.

[29] PG&E Opening Comments at 17.

[30] PG&E Opening comments at 17.

localized incentives and what methodology the Commission should use. However, at this point, there is insufficient evidence to determine either issue. The Next Steps section of this decision discusses the process that we will use to develop a record for making a determination on these issues.

4. Next Steps

The remainder of this proceeding will support the development of an end-to-end framework for integrating distributed energy resources, including relevant valuation methodologies and sourcing mechanisms.

SCE and CESA suggest in their comments on the Proposed Decision that further consideration needs to be given to the phasing of this effort. We agree. Further detail on the phasing of the proceeding will be developed in consultation with R.14-8-013 and made available for party consideration. A revised scoping memo will be forthcoming.

We will continue to follow our current approach of using workshops to assist the Commission and parties in understanding the issues and using parties' comments to rulings in order to create a record.

5. Comments on Proposed Decision

The proposed decision of Commissioner Florio in this matter was mailed to the parties in accordance with Section 311 of the Public Utilities Code and comments were allowed under Rule 14.3 of the Commission's Rules of Practice and Procedure. Comments were filed on September 2, 2015 by Bloom Energy, California Energy Efficiency Industry Council, CESA, CSE, CUE, Greenlining, Enphase Energy, EDF, Joint Demand Response Parties, MCE, NLine, NRDC

[31] SCE Opening Comments at 13.

jointly with Sierra Club, ORA, PG&E, SCE, SDG&E, SolarCity, SoCalGas, SoCalRen, TURN, and VoteSolar, and reply comments were filed on September 8, 2015 by CESA, EDF, Greenlining, Karey Christ-Janer, NRDC jointly with Sierra Club, PG&E, SolarCity, SoCalGas, and SCE.

Edits have been made throughout the Proposed Decision to reflect comments of these parties. In addition to these edits, we provide the following clarifications. First, many parties sought clarification on how the proceeding affects ongoing resource specific proceedings (e.g., energy efficiency, demand response, or net energy metering). The development of the regulatory framework envisioned in this Decision will be a multi-year endeavor. Resource specific proceedings will continue on their independent trajectories until the Commission determines otherwise. Such an act of the Commission will not be subtle or without advance notice.

Second, a broad coalition of parties filed Joint Comments on the Proposed Decision. We view these comments as constructive, containing parts seemingly within the scope of R.14-08-013, parts certainly in the scope of this Rulemaking, and parts currently exogenous to existing Commission rulemakings. We defer to R.14-08-013 in matters of that scope. We confirm that matters pertaining to "Options for compensating DERs" as stated in the Joint Comments will be central to this rulemaking and have attempted to frame that topic through this Decision. We further clarify that the role of the utility in sourcing distributed energy resources will be a part of this proceeding. Lastly, as is the case in R.14-08-013, we note that "[s]ome Parties would like this proceeding, and the [Distribution

Resources Plans], to serve as platforms for reinventing the existing utility distribution services model . . . That is not the focus of this proceeding."[32]

Third, SoCalGas[33] suggests that the connection of this proceeding to R.14-08-013 marginalizes demand-side management targeting the use of natural gas and suggests a parallel track for natural gas and water. We do not dispute this marginalization, but do not support a parallel track. This is after all a proceeding dedicated to integration. With the support of SoCalGas this rulemaking aims to keep all distributed energy resources in mind.

6. Assignment of Proceeding

Michel Peter Florio is the assigned Commissioner and Kelly A. Hymes is the assigned ALJ in this proceeding.

Findings of Fact

1. Parties generally agree that improved integration with system planning should occur either in this proceeding or in R.14-08-013.
2. There is overlap between R.14-10-003 and R.14-08-013.
3. The purpose of R.14-08-013 is to move the utilities toward a fuller integration of distributed energy resources into the utilities' distribution system planning, operations and investment.
4. The purpose of this proceeding is to develop a framework to enable the offering of a wide portfolio of demand-modifying technologies best tailored to customers.
5. The Omnibus Report underscored the need to establish a forum to integrate comprehensive load planning activities.

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[32] R.14-08-013, February 6, 2015 Assigned Commissioner Ruling at 5.

[33] SoCalGas Opening Comments on the Proposed Decision at 2.

6. The OIR stated that the Commission would consider how to develop demand-side management assumptions for long-term resource planning in coordination with the long-term procurement plan proceeding.

7. Issues regarding grid planning are being addressed in other proceedings.

8. Customer choice should be informed by the impact of those choices on the electrical grid.

9. Past integration efforts have had limited success.

10. The current definition of integrated demand-side management is not concrete.

11. Without a clear description or definition, it is difficult to achieve true integration.

12. The definitions created by participants of the March Workshop consistently emphasized the customer and the creation of a framework, tool or solution.

13. Integrated demand-side management is the policy and program framework that the Commission, the Utilities and others offer to customers.

14. The integration of distributed energy resources is the collective actions of the customers, the Commission, the Utilities, the CAISO, etc. to optimize distributed energy resources to the extent possible.

15. A narrow view of the integration of demand-side resources is too limited to form the basis of a proceeding that will effectively complement the distribution resources plan proceeding.

16. We should expand demand-side resources to include distributed energy resources, including resources on the grid side of the customer's meter, anywhere within the Commission's jurisdictional distribution system.

17. A goal is broad, generic, long-term, and not strictly measureable or tangible.

18. A single overarching goal for integration will promote the concept of integration and help the Commission, customers and providers focus their efforts.

19. Two themes evolved from party recommendations for a goal: 1) improving customer and grid benefits; and 2) attaining California's environmental goals.

20. An unanticipated issue, creating local incentives, emerged during workshop discussions.

21. Harmonization between grid and customer benefits is required in the integration of distributed energy resources.

22. Incentives should reflect both grid-wide and locational benefits.

23. There is insufficient evidence to determine whether the Commission should adopt localized incentives and the methodology to be used.

Conclusions of Law

1. Public Utilities Code Section 769 identifies the items to be included in each of the Utilities' Distribution Resource Plans.

2. This proceeding should create the framework to determine how the resources, to fill the required characteristics and values determined in R.14-08-013, could be sourced.

3. This proceeding should determine how to implement the tariffs, contracts or other mechanisms proposed in R.14-08-013.

4. The Commission should ensure that the potential overlap and interactions between this proceeding and R.14-08-013 are being addressed.

5. Public Utilities Code Section 769 and R.14-08-013 require that distribution system planning be informed by distributed energy resources, including choices made by customers.

6. The Commission should consider whether to adopt localized incentives and what the methodology should be.

O R D E R

IT IS ORDERED that:

1. The scope of Rulemaking 14-10-003 is expanded to include the determination of how the resources, needed to fill the required characteristics and values to be determined in Rulemaking 14-08-013, will be sourced.

2. The scope of Rulemaking 14-10-003 is expanded to focus on the integration of distributed energy resources in a holistic way that includes not only what the utilities offer customers (integrated demand-side management) but also what customers offer the utility (integrated distributed energy resources).

3. The following definition of the integration of distributed energy resources is adopted:

> A regulatory framework, developed by the Commission, to enable utility customers to effectively and efficiently choose from an array of distributed energy resources taking into consideration the impact and interaction of resources on the grid as a whole, on a customer's energy usage, and on the environment.

4. The following goal for the integration of distributed energy resources is adopted:

> To deploy distributed energy resources that provide optimal customer and grid benefits, while enabling California to reach its climate objectives.

5. The scope of Rulemaking 14-10-003 is expanded to consider the adoption of localized incentives and the methodology to be used in determining such incentives.

6. Phase I of Rulemaking 14-10-003 remains open to develop the end-to-end framework for integrating distributed energy resources, including relevant valuation methodologies and sourcing mechanisms.

This order is effective today.

Dated September 17, 2015, at San Francisco, California.

MICHAEL PICKER
President
MICHEL PETER FLORIO
CATHERINE J.K. SANDOVAL
CARLA J. PETERMAN
LIANE M. RANDOLPH
Commissioners

APPENDIX A

MF1/KHY/ar9 4/15/2015

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Create a Consistent Regulatory Framework for the Guidance, Planning, and Evaluation of Integrated Demand Side Resource Programs.	Rulemaking 14-10-003 (Filed October 2, 2014)

JOINT ASSIGNED COMMISSIONER AND ADMINISTRATIVE LAW JUDGE'S RULING REQUESTING RESPONSES TO QUESTIONS

Summary

This purpose of this Ruling is to provide an overview of the workshop held on March 11-12, 2015, in Rulemaking 14-10-003 and to get responses to questions resulting from the workshop. The comments will be used to make foundational determinations in this Rulemaking.

1. Background

On October 2, 2014, the Commission established this Rulemaking to consider the development and adoption of a regulatory framework to provide policy consistency for the direction and review of demand-side resource programs. According to the Order Instituting this Rulemaking, the framework is envisioned to be a unified mechanism to authorize and direct the Commission-regulated electric and gas utilities to achieve demand response reduction and load shaping using integrated demand-side resources.

Following a December 5, 2014, prehearing conference, the assigned Commissioner and Administrative Law Judge (ALJ) jointly issued a Ruling and

Scoping Memo laying out the initial scope and schedule for the proceeding.[1] As part of the schedule, the Scoping Memo stated that a series of workshops would be held to educate the parties and the Commission on the multiple aspects of the integration of demand-side resources.

The initial two workshops were referred to as Learning Sessions and included a series of presentations on current integration efforts by the Commission and by other entities both within and external to the state of California. The purpose of the two Learning Sessions was to create a base knowledge of integration as well as to be informed of new integration efforts throughout the country.

On March 11-12, 2015, the ALJ facilitated a two-day highly interactive workshop with several small group discussions. The objectives of the workshop were to develop ideas for a) defining the integration of demand-side resources, b) determining the problems with current integration efforts, and c) shaping a goal for integration.

2. Overview of March 11-12, 2015 Workshop

Parties began day one of the workshop by introducing themselves and providing one attribute of the ideal integration effort. The attributes given included the following terms: comprehensive, targeted, responsive, measurable, reliable, flexible, scalable, optimized, sustainable, green, customer-centric, networked, manageable, impactful, optimized, and digitally-descriptive.[2]

The ALJ then provided a brief overview of past Commission directives on the integration of demand-side resources including the directives in the

[1] Joint Assigned Commissioner's and ALJ's Ruling and Scoping Memo, January 5, 2015.

[2] The complete list of ideal integration effort attributes is provided in the attached workshop notes.

Long-Term Energy Efficiency Strategic Plan and Decision (D.) 09-09-047.[3] Workshop participants[4] were divided into smaller groups and asked to select two positive and two negative attributes of the current integration efforts untaken by the Commission. Positive attributes included illustrative, timely, and widely-available; negative attributes included narrow, delinked, and non-scalable.[5]

Staff from the Commission's Energy Division identified and presented a list of key problems with the current integrated demand-side management efforts. The problems range from policy objectives working at cross-purposes to the programs not being consistently cross-promoted.[6] Workshop participants then brainstormed and added to the list of problems including the need to look at the customers' perspective, a market failure to provide an equivalent revenue stream opportunity, an over-focus on rate-base versus performance-base, and inefficient program administration.[7]

The workshop participants were divided into small groups and asked to prioritize the problems. After a series of small and larger group discussions, the participants categorized and preliminarily ranked the problems.[8]

Next, the workshop participants brainstormed synonyms and related words for integration and then discussed the many aspects of demand-side

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[3] The handout provided by the ALJ, "*Commission Directives for Integrating Demand-Side Resources*," is included in the attached workshop notes.

[4] A list of workshop participants is included in the attached workshop notes.

[5] *See* the attached workshop notes for the complete list of attributes of current integration efforts.

[6] The Energy Division handout, "*Why are Current Efforts Not Succeeding*" is included in the workshop notes.

[7] The complete list of additional problems is included in the attached workshop notes.

[8] *See* the attached workshop notes for the preliminary problem definitions and ranking.

integration. The purpose of the brainstorming activities was to begin to shape a definition or definitions of the integration of demand-side resources. The workshop participants were organized into small groups where they developed the following definitions for the integration of demand-side resources:

- The management of interactive, load-modifying (versus strictly behind the meter) "DERs"[9] to enable a cleaner, smarter and more cost-effective power grid which gleans locational benefits, satisfying system, customer and community needs.
- Meeting customer energy needs with coordinated demand-side resources to support state policy goals.
- Identify system and customer needs, given societal goals, and incentivize solutions from a portfolio of DERs to optimize operations and meet those needs.
- Creation of regulatory framework to enable acquisition of demand-side resources to maximize greenhouse gas reduction and optimize systems (electric and gas) and meet customer needs at minimized societal cost.
- Market and regulatory tools to meet customer needs, reduce and manage loads, support system and local reliability, optimize grid utilization and provide economic and environmental benefits.
- Process of identifying grid needs and customer wants, identifying the value of DER attributes, creating a process/framework that enables cost-effective, optimization of these resources to ensure reliable efficient operation of the grid while supporting customer choice and maximizing consumer benefits, consistent with state/local goals and policies.

[9] DERs are distributed energy resources.

- Customized suites of resources that provide value and meet customer energy needs in an economically and socially responsible manner.
- In order to achieve California greenhouse gas reduction and to optimize the electric and natural gas systems, we need to integrate customer-side technologies, behavior, and market forces through the support and cooperation of private and public partnerships that will lead to innovation and integration by maximizing customer value and participation.
- The tool to achieve system and environmental benefits.

One group was not able to come to consensus on a definition. In discussion, the group stated that while they had agreed on the substance of the definition, they could not agree on the words to use for the definition.

The second day of the workshop focused on three key items: 1) Developing a goal for the Commission's integration efforts; 2) Developing ideas toward resolution and prioritization of the problems previously discussed; and 3) Establishing objectives for integration efforts.

The ALJ again organized the participants into small groups and instructed them to develop a goal or goals for the integration of demand-side resources taking into account the information discussed throughout the workshop: *e.g.*, the problems and the attributes for both current and ideal integration efforts. The ALJ further instructed the group that a goal should be broad, generic, long-term, and not strictly measureable or tangible.

As a result of small group discussions, four groups developed single goals:

- Make the provision of energy services cleaner, more reliable and efficient by identifying key market failures and regulatory interventions that will unlock the potential of customer-side resources to promote these outcomes.

- A successful open marketplace that dynamically communicates and is driven by customer needs, grid needs and policy needs including greenhouse gas reductions.
- Coordinate, consolidate, and bring coherence to all demand-side resources building a responsive, continually evolving system that recognizes their embedded interdependencies in service of a sustainable (economically, environmentally, and equitable) energy future.
- Identify and capture ways that demand-side resources can be coordinated to add value to the system through lowering total costs, reaching strategic goals (greenhouse gas reductions, integration in terms of reliability, and safety) and/or providing customer benefits.

One group developed an overall goal with sub-goals:

- To create a framework to support the accelerated contribution of distributed energy resources to reducing greenhouse gas reductions.
    - Sub-goal 1: To enable customer awareness, choice and ease of participation in distributed energy resources by giving them improved cost and value signals, and infrastructure.
    - Sub-goal 2: To create a distribution system market that facilitates and accelerates third party provision of one-touch services and products, and that functions as the sole location for compensation for the diverse values of distributive energy resources.
    - Sub-goal 3: To enable transmission and procurement planning processes to rely upon distribution system market and on distributive energy resources.

Three other groups developed multiple goals, as follows:

Group 1: 1. Large-scale customer uptake to optimize integrated demand-side management opportunities.
2. Design and implement a framework to overcome barriers and enable integrated demand-side management for customers, the grid, and the environment.

Group 2: 1. Lower environmental and customer costs.
2. Equal playing field to deliver integrated demand-side management services for utility and non-utility providers.
3. Energy users and system managers who can benefit from integrated demand-side management services are provided with these services.

Group 3: 1. Societal goals of greenhouse gas reductions and supporting local economies, jobs and solutions.
2. Customer goals of widespread adoption, cohesive, comprehensive, affordable, customized, relevant, satisfaction, and awareness.
3. Implementation goals of orderly transition, safety net, feedback loop and adaptability, and customer outreach and education.
4. System goals of optimized load and generation, increased efficiency, reliability, resiliency and security, and integration with planning and procurement.

The workshop participants then formed small groups in order to each develop three objectives for the integration of demand-side resources. The ALJ instructed the groups that objectives should be targeted, specific, measureable, tangible and short term. The groups developed several sets of objectives which included objectives such as 25% of customers implement more than one distributive energy resource from a single touch point by the end of 2020. Other objectives developed during the workshop are listed in the attached workshop notes.

During a series of workshop activities, participants took the problems identified the previous day, addressed questions regarding the problems, began to develop solutions to the problems and then reprioritized the problems based

on the new information. The result of this prioritization is as follows. (Each problem is described, as the assigned Commissioner and the ALJ understand it.)

1. *Market Failure of Revenue Streams*: A party who invests in demand-side resources (usually the building owner) typically cannot fully capture the full value of the bill reductions that flow from that investment, either because ownership of buildings often changes hands during the lifetime of the investment or because the building owner does not pay the utility bill. This also strongly deters third-party investment in otherwise cost-effective measures, especially energy efficiency, due to the inability of the investor to fully capture the related benefit stream. Further, some cost savings, such as avoided distribution upgrades, may not be captured at all due to the reality that avoided transmission and distribution costs are averaged across the whole system. These factors reduce the customer's motivation to contribute toward system cost savings that the customer will never capture.
2. *Lack of Access to Data*: Third-parties are limited in their ability to identify and serve customers because they lack the data needed to understand where the electric system needs demand-side solutions, what integrated or demand-side service can provide those solutions, and which customers are eligible and should be targeted.
3. *Demand-Side Resources do not Adequately Impact System Planning, Investments & Operations*: Currently demand-side resources (*e.g.*, energy efficiency, demand response, behind the meter solar) are only partially accounted for when planning generation, transmission, and distribution infrastructure. The same is true for system operations. The omissions result in investments and/or operation of resources that could have been displaced or deferred by demand-side resources. Demand-side resources must be integrated into system planning and operations for its full value to be properly assessed and captured.
4. *Current Efforts Do Not Address Grid Needs*: Demand-side resource policies and incentives do not align with the needs

of transmission and distribution system operators. The integration of demand-side resources should resolve problems for the grid and, ideally, reduce grid revenue requirements.

5. *Current Efforts are too Focused on Rate-Based versus Performance Based*: The existing regulatory framework rewards utilities for installing transmission and distribution infrastructure by allowing them to book those capital expenditures as rate base. This creates a disincentive for utilities to avoid capital cost through effective acquisition of demand-side resources. Likewise, no performance incentives currently incent utilities to procure integrated demand-side resources.
6. *Current Efforts are Not Forward Looking*: Integrated demand-side resource policies and incentives must meet tomorrow's customer and system needs, not yesterday's.
7. *Integration is Divorced from Rate-Making*: Rate design for customers has not been coordinated with integrated demand-side resource policies limiting the motivation a customer has to take action. If customers have the right economic signals, they will be better motivated to take the right integrated actions.

3. Questions for Parties

As a result of the workshop, the assigned Commissioner and ALJ have developed questions to determine foundational issues regarding the scope of this proceeding as well as the definition and goal of the integration of demand-side resources.

In the January 5, 2015 Joint Assigned Commissioner and ALJ Ruling and Scoping Memo, we discussed the question of the breadth of this proceeding, *e.g.*, should the breadth of the proceeding be narrowed to only energy efficiency and demand response or broadened to include all related proceedings. The Scoping Memo noted that following a series of workshops, more detail on the breadth of the proceeding would be determined. Hence, as a result of the March

workshops, we look again at the breadth of this proceeding. We find this deliberate approach particularly important in this proceeding as the subject relates directly to ongoing decision making in other proceedings.

There are two sets of questions in this ruling: one set is specifically associated with the definition of integration and the goal of integration and the second is specifically associated with the breadth of the proceeding. We remind parties that in addressing questions on the goal of the integration of demand-side resources, parties should not confuse the goal of integration with the goal of this proceeding. We want to develop a goal for the integration of demand-side resources for California.

Pacific Gas and Electric Company, San Diego Gas & Electric Company, Southern California Edison Company, and Southern California Gas Company are directed to file responses to these questions; parties are invited to file responses to the questions. The responses shall be filed no later than May 15, 2015 and replies are to be filed no later than May 29, 2015.

Questions Regarding Definition and Goal

1. The workshop participants developed several definitions for the integration of demand-side resources or integrated demand-side management (see pages 4 through 5 above). These definitions have similarities and differences. Is there one definition that stands out as the most appropriate to be used or do you suggest a different definition? Should the Commission define both the integration of demand-side resources and integrated demand-side management?[10] If so, please comment on both terms.

[10] Consider whether the concepts of the "integration of demand-side resources" and "integrated demand-side management" are distinct concepts that should be defined separately for use in this proceeding. Integrated demand-side management (or integrated demand-side technologies or integrated demand-side options) is typically envisioned as something utilities

Footnote continued on next page

2. Should the Commission adopt more than one definition for the integration of demand-side resources and why or why not?
3. The workshop participants developed several goals for the integration of demand-side resources (see pages 6 through 7 above). Should the Commission consider having one overarching goal or it should it have several goals? Why?
4. If the Commission selects one goal for the integration of demand-side resources, what should that goal be? Remember that a goal or goals should be broad, generic, long-term, and not strictly measureable or tangible.
5. If the commission determines that it needs several goals for the integration of demand-side resources, what should the structure of these goals entail? For example, should there be an overarching goal with sub-goals or should there be several goals based on categories? Please explain why.
6. If the Commission determines it should have an overarching goal with sub-goals, what should these be and why?
7. If the Commission determines it should have several goals based on categories, what should the categories be and what should the goals be based on the category and why?

Questions Regarding the Breadth of this Proceeding

1. Are the descriptions of each of the seven problems provided above on pages 8 and 9 accurate? What additions or clarifications are needed?

or third parties offer to customers. Integrated demand-side actions or behaviors as something customers do. The California Energy Efficiency Strategic Plan observes that "integrated packages of demand-side management solutions are a consistent theme throughout each of the Chapters in this Plan." It sets the goal to "deliver integrated demand-side options that include efficiency, demand response, energy management and self-generation measures" such that "customers realize increased energy savings at lower cost through the implementation of a menu of demand-side management options." (California Energy Efficiency Strategic Plan, 2008 at 73).

2. Following workshop discussions on the problems with current integration efforts, related questions and working toward solutions, the workshop participants reprioritized the identified problems. Do you agree with the final prioritization of problems and why? How would you prioritize the identified problems and why?
3. Some of the definitions, goals, and objectives suggested by parties imply that the effective integration of demand-side resources requires demand-side resources to be better integrated with utility system planning, investment, and operation, as well as CAISO planning and operations. Is this correct? Do you agree? Should this broad challenge be addressed in this proceeding? Why and how?
4. If identified as an objective of this proceeding, how should system planning and benefits be considered in a way that does not duplicate what is being considered in the distribution resources plans (or long-term planning process) proceedings?
5. Should policies supporting the integration of demand-side resources maximize system benefit, including greenhouse gas reductions, maximize customer participation and benefits, or some combination of the two? In the integration of demand-side resources, how can we harmonize the needs and wants of customers with system needs, including greenhouse gas reductions? Should financial benefits and/or customer incentives for the integration of demand-side resources be uniform across the state and/or service territory or differentiated by locational value?
6. Should the Commission shift from the current framework of encouraging the integration of demand-side resources through individual customer revenue streams from bill reductions and utility incentive payments to a different framework in which those benefit streams can be commoditized (bought and sold) to meet system needs (*e.g.*, MW, MWh, flexible resource adequacy, greenhouse gas reductions)? Should the Commission create an open procurement or similar framework through which the integration of demand-side resources meets system needs? How can such a framework reflect customer needs, wants and

benefits? How can such a framework encourage integrated customer actions?

7. How can the long run benefits of distributed energy resource investments be monetized and captured in an environment where ownership and occupancy of residential and commercial buildings changes in a much shorter time frame than the life cycle benefits of those investments?
8. How can the various benefits of distributed energy resource investments that are considered in a complete cost-effectiveness evaluation be converted into financial benefits that flow to those who finance such investments (which may or may not include onsite customers receiving the energy service)?
9. How can ratemaking better consider and reflect the value of the integration of demand-side resources? Are there any steps this proceeding could or should take on this issue? What level of priority should this issue be within this proceeding?
10. Is it important that any framework that emerges from this proceeding encourages third parties or utilities to deliver, and customers to take, integrated packages of technologies, at the same or within a limited time frame? How important is this (i.e., integrated demand-side management or actions) as compared to the integration of demand-side resources into system planning, etc., as discussed above? Should this proceeding take up both issues? Why or why not?

IT IS RULED that:

1. Pacific Gas and Electric Company, San Diego Gas & Electric Company, Southern California Edison Company, and Southern California Gas Company are directed to file responses to the questions contained in this Ruling. The responses shall be provided in the same order as the questions. The responses shall be filed no later than May 15, 2015 and replies are to be filed no later than May 29, 2015.
2. Other parties to this proceeding are invited to file responses to the questions contained in this Ruling. The responses shall be provided in the same order as the questions. The responses shall be filed no later than May 15, 2015 and replies are to be filed no later than May 29, 2015.

Dated April 15, 2015, at San Francisco, California.

/s/ MICHEL PETER FLORIO	/s/ KELLY A. HYMES
Michel Peter Florio	Kelly A. Hymes
Assigned Commissioner	Administrative Law Judge

ATTACHMENT 1

Workshop Package

The following attachment includes

1) List of Attendees/Organization Represented
2) Final Workshop Agenda
3) Workshop Notes transcribed from Workshop Flip Charts
4) Handout: Commission Directives for Integrating Demand-Side Resources
5) Handout: Problems Statements and Associated Barriers

March 11-12, 2015 Workshop Attendance List

Name	Organization Representing
Jennifer Berg	Association of Bay Area Governments
Mindy Cray	Blue Point Planning
Eugene Wilson	California Clean Energy Committee
Anthony Harrison	California Energy Efficiency Industry Council
John Herter	California Energy Storage Alliance
Karen Mills	California Farm Bureau Federation
Simon Baker	California Public Utilities Commission
Dorris Chow	California Public Utilities Commission
Jeanne Clinton	California Public Utilities Commission
Rory Cox	California Public Utilities Commission
Noel Crisostomo	California Public Utilities Commission
Commissioner Florio	California Public Utilities Commission
Cathy Fogel	California Public Utilities Commission
ALJ Kelly Hymes	California Public Utilities Commission
Bob Leven	California Public Utilities Commission
Joy Morgenstern	California Public Utilities Commission
Lisa Paulo	California Public Utilities Commission
Matthew Tisdale	California Public Utilities Commission
Melissa Kasnitz	Center for Accessible Technology
Megan Myers	Ctr for Energy Efficiency & Renewable Technologies
Stephanie Wang	Center for Sustainable Energy
Brian Korpics	Clean Coalition
Nora Sheriff	CLECA
Jamie Mauldin	Coalition of California Utility Employees
Eric Woychik	Comverge
Nicole Johnson	Consumer Federation of California
Mona Tierney-Lloyd	EnerNoc
Steven Moss	Environmental Defense Fund
Christina Torok	Evergreen Economics
Jordana Cammarata	FirstFuel
Carmelita Miller	Greenling Institute
Jennifer Chamberlin	Johnson Controls, Inc.
Jody London	Local Government Sustainable Energy Coalition
Michael Callahan-Dudley	Marin Clean Energy
Karey Christ-Janer	n/a
Merrian Borgeson	Natural Resources Defense Council

Name	Organization Representing
Brian Theaker	NRG Energy, Inc.
Tim Drew	Office of Ratepayer Advocates
Olivia Patterson	Opinion Dynamics
Matt O'Keefe	OPower
David Sawaya	Pacific Gas and Electric Company
Athena Besa	San Diego Gas & Electric Company
William Rostov	Sierra Club
Francesca Wahl	Silicon Valley Leadership Group
Jaclyn Harr	SolarCity
Mark Martinez	Southern California Edison Company
Darren Hanway	Southern California Gas Company
Michael Nguyen	Southern California Regional Energy Network
Cynthia Mitchell	The Utility Reform Network
Laura Wisland	Union of Concerned Scientists
Jim Baak	Vote Solar

RULEMAKING 14-10-003:

INTEGRATING DEMAND-SIDE RESOURCES

Workshop

March 11 and 12, 2015

Day 1 – Wednesday, March 11, 2015

Commission Offices
505 Van Ness Avenue
Golden Gate Training Room
San Francisco, CA 94102

10:00 am	Welcome and Overview of Agenda (15 min)
10:15 am	Introductions (45 min)
11:00 am	Commission Directives on Integrating Demand-Side Resources (15 min)
11:15 am	Current Integration Attempts: Limited Success (30 min)
11:45 pm	Determining the Problems with Current Attempts (45 min)
12:30 pm	Lunch (60 min)
1:30 pm	Prioritizing the Problems (60 min)
2:30 pm	Defining the Integration of Demand-Side Resources Part 1 (45 min)
3:15 pm	Break
3:30 pm	Defining the Integration of Demand-Side Resources Part 2 (45 min)
4:15 pm	Recap and Brief Overview of Day 2 (15 min)
4:30 pm	Adjourn

Day 2 – Thursday, March 12, 2015

Commission Offices
505 Van Ness Avenue
Courtyard Training Room
San Francisco, CA 94102

10:00 am	Welcome and Overview of Agenda (15 min)
10:15 am	Recap of Day 1 (15 min)
10:30 am	Creating Solutions to our Integration Problems (90 min)
12:00 pm	Lunch
1:00 pm	Prioritizing Our Proposed Integration Solutions (15 min)
1:15 pm	Shaping an Integration Goal (60 min)
2:15 pm	Break (15 min)
2:30 pm	Proposing Objectives for Integration (60 min)
3:30 pm	Prioritizing Solutions (30 min)
4:00 pm	Final Remarks (30 min)
4:30 pm	Adjourn

WORKSHOP NOTES TRANSCRIBED FROM THE FLIP CHARTS USED DURING THE WORKSHOP

DAY ONE NOTES

Attributes of the Ideal Integration Effort

- Across the board
- Easy
- Trackable
- Responsibly
- Data accessible
- Informed
- Customer-centric
- Equal
- Digitally sophisticated
- Creative
- One-stop
- Value
- Simple
- Equitable
- Manageable
- Inclusive
- Leverage
- Achievable
- Customer Needs
- Unpolluting (GHG)
- Wholistic
- Smart
- Cost-Effective
- Strategic
- Sustainable
- Green
- Revenue Stream
- Standardized
- Comprehensive
- Targeted
- System Benefits
- Networked
- Integrative
- Cross-Pollination
- Responsive
- Profitable
- Phased
- Customer Engagement
- Measureable
- Accessible
- Synergistic
- Effective
- Disruptive/Out of the Box
- Broadly applicable
- Reliable
- Flexible
- Cross agency
- Umbrella branded
- Efficient
- Silo buster
- Impactful
- Scalable
- Transforming
- Visionary
- Market based
- Volume strategy
- Market friendly
- Customer trust
- Menu-based
- Rates awareness
- Unbiased
- Transportation inclusive
- Optimized
- innovative

Ideal Integration

- is not necessarily a program – could be a structure/framework – could use performance standards.
- Unified/bundling
- Constraints – compliance and reporting
- Regulatory framework for transforming
- Should be technology neutral
- Volume should be large-scale
- Target customers then groupings
- Move from goals-based and value-based
- The vision should be metrics instead of cost effectiveness protocols
- Harmonized with customer needs/grid needs
- Programs should be trackable
- Move from ratepayer funded to market-based.

CPUC Integration Directives
(See Handout below)

Positive and Negative Attributes of Current Commission Integration Efforts

Positive

- Positive
- Illustrative
- Timely
- Priority
- Collaborative (CPUC-CAISO)
- Creation of integrative audit
- Improved integrative audits
- Rosenfeldian / impactful (had an impact on consumption)
- Market making
- Market opportunity
- Developed delivery model
- Customized
- Experimental
- Lessons Learned
- Widely available
- Knowledgeable
- Passionate
- Creates microgrids and allows for testing for microgrids
- Diversity (M/F)

- Business Expansion
- Improved coordination
- Emerging markets

Negative

- Utility role as gatekeeper instead of enabler
- Exclusive (?; administration, options)
- Narrow (technology)
- Lack of innovation
- Inefficient outreach
- No compensation for (or attribution of) value
- Pervasive silos
- Difficult to point to value for customer
- Delinked
- Silos- cylinders of excellence on parallel paths
- Biased or conflicting incentivizing
- Only 15 customized IDSM customers
- Competing goals
- Fragmented
- Very EE centric
- No added value view
- Bureaucratic
- Non-transparent
- Non-scalable
- Misalignment with customer needs, abilities and attributes
- Untapped societal value
- Lack of a framework
- Emphasis on programs, not integration
- Relies on counterfactual
- One truck roll- (offering a bundle)

Problems and Barriers associated with Current Integration Efforts
(See handout below on problems and barriers as indicated by Energy Division)

Participants input on problems and barriers

- Market failure of equivalent revenue stream opportunities.
    - Departing load charges
    - No inclusion of PCT or customer value
- Current integration efforts are not forward looking
    - Administratively determined
    - Programmatic approach
    - Is not dynamic or market based; not customer-based
- Divorced from rate-making
    - Outside of general rate case proceedings
- Too focused on rate base vs a performance basis
    - Regulatory foundation is rate based / cost of recovery model
- Built in market failure because of time horizon of current owner versus the building
    - Conflict between building value

Participants input on problems and barriers (continued)

- Lack of access to data
    - Privacy
    - Statutory / Regulatory barriers
    - Control of data
    - Inertia
    - Incremental nature of data
- Inefficient program administration – too many in one area
    - Legislation
    - Communication
- Current efforts do not address grid needs
    - Need to look into future and work back
    - CAISO not modeling
    - FERC and WECC regulations
- Today's programs do not address load reduction and load shaping
    - No framework
- There is no consistent tracking or framework for pilots
    - Lack of definition
    - Lack of data
- Too focused on rate-based versus performance based
    - Cost of recovery model
- No role defined
    - Inertia
    - Time
- Need for a loading order for Integration
    - Definition of roles
    - Inertia
    - Trying to match what the customer wants
- Need an information Center
    - Program centric
- Isolation of customer side from meter

    - Technological barriers: installed meter using ZBY and google uses thread
- Misalignment between customer wants and marketing

Initial Top Eight Problems:

- Lack of access to data: customer and systems data; infrastructure for data access and use; 21st century customer tools; isolation of the customer side from the meter; need an information network
- Policies work at cross – purposes: - leading to (1) in efficient program administration and that IDSM is not consistently cross promoted; market actors typically provide just one technology / resources; and are not forward looking; with insufficient promotion of existing buildings, and not promoting logical bundles, results in inefficient program administration, and current residential rates leave out many customers (smaller non-low income households have poor incentives for participation in IDSM); and there is no tracking framework for customers
- Integration does not adequately impact system: integration does not impact utility planning or address grid needs, today's programs do not address load reduction & load planning, does not promote logical bundles, is not forward looking, too focused on rate-based vs performance based
- Market failure of revenue streams: built-in market failure of revenue streams, not consistently cross-promoted, does not promote logical bundles; market actors typically just provide one resource or technology, customers have to deal with multiple applications, there is insufficient promotion of existing buildings, isolation of customer side from meter, misalignment between customer wants, system needs and marketing
- Current integration efforts are not forward looking: rates are not generally well aligned with future cost expectations, are divorced from, don't integrated grid needs, work at cross purposes, and do not address load reduction and load shaping.
- Integration is divorced from rate making: outside of the GRC, and current residential rates leave out many customers, smaller non-low income households have poor incentives for participation in IDSM, there is poor awareness of time-varying rate options among residential; rates are generally not well aligned with future cost expectations.
- Current efforts are too focused on rate-based versus performance based: (using a regulatory cost of recovery model), and market actors typically provide just one technology/resource;
- Current efforts don't address grid needs: doesn't address load reductions and load shaping; doesn't adequately impact system; current system is not

forward looking; doesn't have a cooling strategy; does not promote logical bundles

DAY TWO NOTES

Integration Definitions from Small Group Discussions

- Integrated demand-side management is the management of interactive, load-modifying (versus strictly behind the meter) "DERs"[1] to enable a cleaner, smarter and more cost-effective power grid which gleans locational benefits, satisfying system, customer and community needs.
- Meeting customer energy needs with coordinated demand-side resources to support state policy goals.
- Identify system and customer needs, given societal goals, and incentivize solutions from a portfolio of DERs to optimize operations and meet those needs.
- Creation of regulatory framework to enable acquisition of demand-side resources to maximize greenhouse gas reduction and optimize systems (electric and gas) and meet customer needs at minimized societal cost.
- Integrated demand-side resources are market and regulatory tools to meet customer needs, reduce and manage loads, support system and local reliability, optimize grid utilization and provide economic and environmental benefits.
- Process of identifying grid needs and customer wants, identifying the value of DER attributes, creating a process/framework that enables cost-effective, optimization of these resources to ensure reliable efficient operation of the grid while supporting customer choice and maximizing consumer benefits, consistent with state/local goals and policies.

[1] DERs are distributed energy resources.

- Customized suites of resources that provide value and meet customer energy needs in an economically and socially responsible manner.
- In order to achieve California greenhouse gas reduction and to optimize the electric and natural gas systems, we need to integrate customer-side technologies, behavior, and market forces through the support and cooperation of private and public partnerships that will lead to innovation and integration by maximizing customer value and participation.
- The integration of demand-side resources is the tool to achieve system and environmental benefits.

Goals from Small Group Discussions

Group 1: Make the provision of energy services cleaner, more reliable and efficient by identifying key market failures and regulatory interventions that will unlock the potential of customer-side resources to promote these outcomes.

Group 2: A successful open marketplace that dynamically communicates and is driven by customer needs, grid needs and policy needs including greenhouse gas reductions.

Group 3: Coordinate, consolidate, and bring coherence to all demand-side resources building a responsive, continually evolving system that recognizes their embedded interdependencies in service of a sustainable (economically, environmentally, and equitable) energy future.

Group 4: Identify and capture ways that demand-side resources can be coordinated to add value to the system through lowering total costs, reaching strategic goals (greenhouse gas reductions, integration in terms of reliability, and safety) and/or providing customer benefits.

Group 5: To create a framework to support the accelerated contribution of distributed energy resources to reducing greenhouse gas reductions.

- Sub-goal 1: To enable customer awareness, choice and ease of participation in distributed energy resources by giving them improved cost and value signals, and infrastructure.
- Sub-goal 2: To create a distribution system market that facilitates and accelerates third party provision of one-touch services and products, and that functions as the sole location for compensation for the diverse values of distributive energy resources.
- Sub-goal 3: To enable transmission and procurement planning processes to rely upon distribution system market and on distributive energy resources.

Group 6: 1. Large scale customer uptake to optimize integrated demand-side management opportunities.
2. Design and implement a framework to overcome barriers and enable integrated demand-side management for customers, the grid, and the environment.

Group 7: 1. Lower environmental and customer costs.
2. Equal playing field to deliver integrated demand-side

management services for utility and non-utility providers.

3. Energy users and system managers who can benefit from integrated demand-side management services are provided with these services.

Group 8: 1. Societal goals of greenhouse gas reductions and supporting local economies, jobs and solutions.

2. Customer goals of widespread adoption, cohesive, comprehensive, affordable, customized, relevant, satisfaction, and awareness.

3. Implementation goals of orderly transition, safety net, feedback loop and adaptability, and customer outreach and education.

4. System goals of optimized load and generation, increased efficiency, reliability, resiliency and security, and integration with planning and procurement.

Sets of Objectives from Small Group Discussions

Group 1

1. CPUC adoption of workable, implementable, long term decision on framework – including distribution marketplace – by October 2015 (stretching) or December 2015 (feasible).
2. Creation of single touch point distribution marketplace by mid-2017.
3. 25% of customers implement more than one DER from single touch point by end of 2020.

Group 2

1. Year One – cell phone app for smart meter data
2. Year Two –
    - develop tool for cost-effectiveness compatible with location value time-based reference price for DER

- create a map of distribution system opportunities and needs at the circuit level
- establish standard for data exchange and resource plug and play to facilitate efficient exchange resource of DER products and service
- identify revenue model for IOU/DER providers to support a distribution system market.

3. Year Three – depending on outcome of two year analysis, launch a distribution system market or new DER tariffs.
4. Year Four – facilitated 200 transactions under new market/tariff

Group 3

1. Harmonize the ways to assess cost and value across all of the integrated demand-side resources, during this proceeding (complete task one 0.09-09-047)
2. Tools for customers to evaluate and prioritize their IDSR options and the effective and lifestyle appropriate engagement mechanisms (financing, assistance, resources, rebates) during this proceeding (active & functioning)
3. Incorporate value of IDSM into the state's energy planning proceedings.

(CEC, CPUC, forecasting, CAISO, etc.) next planning cycle.

Group 4

1. Identify, quantify and compensate the values provided by DSRs
2. Support a robust set of DSR providers that will be able to capture value and innovate. Measure the number of providers, activity level, investment, and marketing.
3. Grid/resource planners increase reliance on DSRs. Measure change in planning procurement.

Group 5

1. Develop tools to harvest the highest value of IDSM for grid benefits at different scales (building, feeder, system, etc.)
2. IDSM animated tariffs – customers enroll to capture value of IDSM.
3. Test & demonstrate transaction structures to harvest cost effective IDSM at specific location.

Group 6

1. The utilities no longer rely on assets as basis for revenue and at the same time create a feasible revenue model that values IDSM.
2. There is a framework and pricing mechanism to allow open market transactions around DSM by 2017.
3. By 2017 harmonize statewide regulatory policies to allow for a successful IDSM environment.
4. By 2017 relevant & useful data is readily available and accessible to consumers and market actors.
5. Effective marketing enables a tipping point in demand for IDSM for a variety of consumers within next 3-5 years.

Group 7

1. Develop a set of value streams (e.g. tariffs, procurement venues, etc.) for locational investments in next 1-3 years.
2. Incorporate the probabilistic value of IDSM investments into system-wide planning in next round of long-term planning.
3. Develop an IT infrastructure for distribution grid operators that will allow ISM resources to be effectively and intelligently dispatched (and valued) by 2020.
4. Provide customer facing tools that allow for adoption of site-specific DSRs which provide individual and grid benefits within next 2 years.

COMMISSION DIRECTIVES FOR INTEGRATING DEMAND-SIDE RESOURCES

- **D.05-09-043:** Ensure expanded use of integrated programs and tracking of program implementation. The goal is to create the best combination of resources to meet a customer's needs while improving cost-effectiveness and avoiding customer confusion.
- **D.07-10-032**: Develop a strategic plan for demand-side options
- **Long Term Energy Efficiency Strategic Plan**: September 2008
- **D.09-09-047**: Established a statewide IDSM program including 8 tasks for the IDSM Task Force

8 Tasks for the IDSM Task Force

1. Development of a proposed method to measure cost-effectiveness for integrated projects and programs including quantification and attribution methods that includes GHG and water reductions benefits and the potential long-term economic and electric / gas hedging benefits;
2. Development of proposed measurement and evaluation protocols for IDSM programs and projects;
3. Review IDSM enabling emerging technologies for potential inclusion in integrated programs;
4. Development of cross-utility standardized integrated audit tools using PG&E's developed audits as a starting point;
5. Track integration pilot programs to estimate energy savings, develop best practices and lessons learned and develop standard integration best practices that can be applied to all IOU programs based on pilot program evaluations and the results of additional integration promoting activities (i.e., EM&V and cost-benefit results);
6. Develop regular reports on IDSM progress and recommendations to the Commission;
7. Organize and oversee internal utility IDSM strategies by establishing internal Integration Teams with staff from EE, DR, DG, marketing, and delivery channels; and

8. Provide feedback and recommendations for the IOU's integrated marketing campaigns including how the working group will ensure that demand response marketing programs approved as category 9 programs are coordinated with energy efficiency integrated marketing efforts.

WHY ARE CURRENT EFFORTS NOT SUCCEEDING?
PROBLEM STATEMENTS AND ASSOCIATED BARRIERS

Problem:	Policy objectives sometimes **work at cross purposes** causing achievement in one area to undermine achievement in others.
Barriers:	Policies promoting cost effectiveness, customer satisfaction, reliability, and greenhouse gas reductions are not being considered in a consistent or integrated fashion. There is a lack of a high level, long term vision document outlining the benefits of integration, the strategies that will be employed, the agreed upon metrics and how integration fits into other state initiatives such as AB32 There is a lack of identification and definition of terms in integration efforts. There is lack of clarity regarding whether there is a need for a preferential rate structure for customers implementing multiple demand-side resources
Problem:	Integration efforts **do not adequately impact system** planning, investments and operations.
Barriers:	There is a tension between the financial interest of utilities, third-parties, participating customers, and non-participating customers. Organizational silos Inertia Complexity
Problem:	Integration efforts are **not being consistently cross-promoted** or delivered
Barriers:	Strict energy efficiency targets for account managers Disconnection between multiple programs: funding silos and cliffs; design, and delivery; accountability structures within PA's

PROBLEM STATEMENTS AND ASSOCIATED BARRIERS (continued)

Problem:	Integration efforts **do not promote logical bundling of offerings**, i.e. residential (or non-residential) energy efficiency and demand response; energy efficiency and distributed generation for new construction.
Barriers:	Inconsistent cost-effectiveness requirements across programs
	Disconnection between multiple programs: funding silos and cliffs; EM&V requirements
	Participation in energy efficiency reduces available demand response benefits and associated payments
	Energy efficiency counting rules requiring discounting of savings when buildings are net exporters to the grid
	Program administration separation, i.e. utilities versus CA Energy Commission (residential new construction only)
	Lack of identification and prioritization of potential bundled offerings
Problem:	Integration efforts **do not include a cooling load strategy**.
Barriers:	Lack of prioritization
	Inconsistent cost-effectiveness requirements across programs
	Disconnection between multiple programs: funding and EM&V requirements
	Incorrect implementation timing
Problem:	Market actors typically specialize in **delivery of one resource**.
Barriers:	Above barriers shaping program design and delivery
	Lack of diverse industry networks
	Workforce training requirements
	Permitting

PROBLEM STATEMENTS AND ASSOCIATED BARRIERS (continued)

Problem:	Customers wishing to implement multiple demand-side solutions must complete **multiple applications** and/or work with multiple parties.
Barriers:	Lack of awareness that offering bundles leads to long-term relationship building
	Lack of awareness that offering bundles minimizes administrative and regulatory burden
	Lack of awareness that offering bundles can also meet other goals, e.g. water, labor, or regulation
Problem:	Integration efforts are not being undertaken in **new construction or emerging technologies.**
Barriers:	Lack of clear Commission guidance or prioritization
	Confusion about alignment of zero net energy goals with distributed resource planning framework and system needs
Problem:	Integration is not being fully promoted for **existing residential and commercial buildings.**
Barriers:	Major changes are more challenging for existing buildings yet existing buildings have the potential of addressing 45% of electric energy and demand savings in building altercation projects according to the IOUs (2010 – 2012 Codes and Standards Impact Report).
	Existing buildings require customer education and behavior modifications that is not successfully being promoted by existing IDSM efforts. Initial pilots such as Continuous Energy Improvement for non-res customers are positive but have not been ramped up as desired.
	Lack of funding for integration and customer incentives and testing emerging technologies in real world environment
	Need post evaluation to determine impact of project on existing building stock and require success metrics to determine success.

PROBLEM STATEMENTS AND ASSOCIATED BARRIERS (continued)

Problem:	Current residential rates leave out many customers: Smaller non-low-income households have poor incentives for participation in IDSM
Barriers:	Tiered rates, with tiers not adjusted for household size
Problem:	Poor awareness of time-varying rate options among residential customers
Barriers:	Utilities have not adequately promoted awareness of optional rates; Most existing time-varying rates are overly complex
Problem:	Rates are generally not well aligned with future cost expectations
Barriers:	Regulatory inertia in ratesetting proceedings

(END OF APPENDIX A)