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PG&E Comments Regarding August 8 Demand Response Workshop

Additional submitted attachment is included below.

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California Energy Commission
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Re: Docket 17-IEPR-12: Pacific Gas and Electric Company Comments on the August 8, 2017 Integrated Energy Policy Report Workshop Regarding Demand Response

Pacific Gas and Electric Company (PG&E) appreciates the opportunity to provide comments on the August 8, 2017 Integrated Energy Policy Report (IEPR) Workshop on Demand Response (DR) hosted by the California Energy Commission (CEC). PG&E's comments include two high level comments and 12 recommendations for the CEC when considering DR in the 2017 IEPR.

PG&E recommends the CEC:

- **Focus on DR services provided and in removing California Independent System Operator (CAISO) market integration barriers-- rather than focusing exclusively on the megawatts (MW) of DR available in California.**

  DR provides an array of services to the grid such as reliability services (locally and system-wide), renewable integration assistance, and ramping capability during periods of grid need. Focusing on a flat number of DR MW participating in the market ignores the impact of the California Public Utilities Commission's (CPUC) regulatory policies and requirements on the investor-owned utilities (IOUs). For example, in PG&E's case, a steady number of DR MW participating is a reflection of guidance from the CPUC, authorized funding levels, and a prohibition on marketing certain programs. PG&E urges the CEC's 2017 IEPR recommendations for DR to focus less on the total MW provided, and more on the integration barriers into the wholesale market.

- **Frame DR as a platform rather than a technology.**

  PG&E views its current tariffs and pilots (e.g., the Demand Response Auction Mechanism (DRAM)), as technology-neutral platforms for providing load flexibility. Accordingly, PG&E recommends that the CEC's 2017 IEPR recognize DR as a platform for enabling various technologies to provide load flexibility, rather than as a stand-alone technology.

PG&E provides the following 12 recommendations for the 2017 IEPR as it relates to DR:

I. THE CEC SHOULD RECOGNIZE DR'S DISTINCT SERVICES.

PG&E's current DR program offerings are known for their reliability in various economic and emergency grid situations, mostly during the summer resource adequacy operating window. These DR programs are also called upon outside of this window, in emergency situations (i.e., February, 2014 and May 2, 2017). The use of DR programs has evolved over time, from initially addressing system gross peak load to today where it is used to address locational net load issues. These uses highlight that DR programs are agnostic and offer services that are available to be dispatched by grid operators (either through CAISO's market or IOU Load Serving Entity (LSE) calls) to provide relief and assist with balancing supply-demand when needed. The deviations and volatility of today's grid can be traced to a variety of sources, including forecasting and physical output from intermittent resources. No matter how the grid issues begin, if DR is available to be called upon, it will respond. For example, when unforeseen operational events led the CAISO issued a Stage 1 event on May 3, 2017[1], CAISO dispatched PG&E's DR program to address the situation.

As grid needs evolve, DR needs to expand and enable new models to address these challenges. The CPUC is gathering stakeholder inputs on potential new DR models, specifically in areas of: policy, new services (e.g., load consumption, net export from customer), program rules (e.g., multiple participation rules, baselines), and technical working group(s). The CPUC's stakeholder process is foundational to expanding the future role of DR.

II. DR FUTURE DESIGN NEEDS TO BE FLEXIBLE AND ASLIGN CUSTOMER CAPABILITIES TO GRID NEEDS.

PG&E agrees with the CAISO that DR future design needs to be more flexible and requires aligning customer capabilities to grid needs. PG&E's 2018-2022 DR Application[2] provided two foundational principles that align with the CAISO's recommendation:

(1) DR programs must effectively meet evolving grid needs and;
(2) DR programs should enable choice and flexibility in how customers and aggregators can participate in DR to unlock more opportunities to serve grid needs[3].

To operationalize these two principles, DR programs must be a dynamic platform that interact with customers and third parties and the precise needs of the grid at specific times and locations – and these grid services must be appropriately valued. PG&E's 2018-2022 DR Application advances these principles and PG&E looks forward to working with stakeholders in the CPUC's DR New Models workshops and subsequent activities on these important activities.

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[1] May 16, 2017 Market Performance and Planning Forum, http://www.caiso.com/Documents/Agenda-Presentation-MarketPerformance-PlanningForum-May16_2017.pdf

[2] CPUC A. 17-01-012. Application of Pacific Gas and Electric Company (U 39-E) for Approval of Demand Response Programs, Pilots and Budgets for 2018-2022

[3] CPUC A. 17-01-012, p. 2-4. Application of Pacific Gas and Electric Company (U 39-E) for Approval of Demand Response Programs, Pilots and Budgets for 2018-2022

III. A JOINT CPUC-CAISO WORKING GROUP ON MARKET INTEGRATION BARRIERS IS NEEDED.

PG&E recommends the CPUC and CAISO establish a joint working group (either through CAISO's Energy Storage and Distributed Energy Resources, Phase 3 initiative or through the re-introduction of the Supply Integration Working Group) to consider:

- DR Measurement: DR is measured differently whether it is delivered by an IOU (by the Load Impacts Study) or non-IOU Demand Response Provider (DRP) (based on the Demand Response Auction Mechanism (DRAM) contract amount). A more consistent measurement tool, regardless of who provides the DR, is needed.
- Alignment of Supply Plan Timing: Additional guidance for the timing and alignment of the Supply Plan as it relates to RA valuation is needed. The Supply Plan timing impacts not just the DRPs and their Scheduling Coordinator (SC), but also the IOU LSEs, who are submitting DRAM as part of their Supply Plan. Furthermore, as customers migrate from IOU load portfolios to other providers such as Community Choice Aggregators (CCA), the issues with IOU and non-IOU DRP resource composition will continue (e.g., the time it takes the IOU and non-IOU DRPs to create locations with the new LSE and update the Master File, may result in resources that are unavailable and thus, result in mismatched supply plans).
- Minimum Size Requirement: The CAISO in conjunction with the CPUC should discuss whether the CAISO's minimum size requirement for Proxy Demand Response (100kW for aggregations by LSE and subLAP) is sustainable. Currently, CAISO's minimum size requirement results in some MW of DR not being integrated into the market.
- Align DR Market Rules: CAISO's market processes currently do not fully accommodate DR. The CAISO should revisit aligning market rules with DR resources in a stakeholder process. For example, hourly bids do not always align to the Pmax in the MasterFile due to a variety of factors including weather sensitivity or customer operations. Without the ability for a DR resource to de-rate its operations, the resource is subject to penalties.

IV. DR PARTICIPATION LEVELS HAVE REMAINED FLAT DUE TO CPUC GUIDANCE, FUNDING AND REQUIREMENTS.

IOU DR participation levels have been capped because of constraints on the program from CPUC guidelines, authorized funding levels, and limits on marketing of programs.[4] Funding levels for

[4] The BIP program design has remained essentially unchanged since 2012 as approved in D.12-04-045. This is primarily driven by a 2010 settlement decision that limited the amount of emergency DR that can count for Resource Adequacy [Reference: D. 10-06-034] While the initial cap was 3.5% of CAISO's historic peak load of 50,270 MW, it was incrementally reduced each year by 0.5% until it reached 2% in 2014. As the historic peak load has remained stable, this cap has remained fixed. PG&E's share of the peak load is approximately 330 MW, which has been reached as of this year. BIP customers account for 300 MW of this cap, and there are now customers on a wait list, and the remaining 30MW of the cap is allocated to DRAM. Lastly, PG&E has been ordered by the CPUC not increase marketing for the BIP program.[Reference: D. 16-06-029, O.P. 23(b).] Similar limits exist for other PG&E programs. For example, SmartAC for non-residential customers has been closed to new enrollments since the 2012-2014 cycle. [Reference: D. 14-04-45, O.P. 38.] Likewise, Marketing, Education, Outreach for CBP was denied for the same cycle.[D. 14-04-45, O.P. 51.]

IOU DR programs have been relatively flat since 2012,[5] even with recent funding increases to support IOUs' integration of DR programs into the CAISO markets.

Table 1: PG&E Authorized and Requested Funding Levels 2012-2022

	2012-14 Cycle (3 yrs.) D. 12-04-045			**Bridge from 2012-14 (2 yrs.)** D. 14-05-025		**Bridge from 2015-16** D. 16-06-029	**2018-2022 Cycle** A.17-01-012 **(Requested)**
Years	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Budget for Entire Cycle	$191,886,588			$100,673,133		$59.9M	$349M
Annualized Budget	$63.9M	$63.9M	$63.9M	$50.3M	$50.3M	$59.9M	$69.7M (i)

(i): Comparability between 2017 and 2018-2022 cycles requires adjusting as BIP incentives of $31.8M were included in the current Application (previously excluded) and DRAM funding of $12M was not included. If normalizing the two periods then the 2017 budget would have been $47.6M and the yearly 2018-2022 budget would be $37.9M (Source: PG&E A. 17-01-012, p. 6-2, Table 6-1).

As a part of the CPUC's strategy to limit IOU programs, the CPUC has various efforts underway to enable a third-party DR market, including the development of Rule 24, the DRAM pilot, and "Click-Through". While historically DR has been a reliability and peak shaving product, its role is transitioning to address broader grid and societal needs. The changing nature of DR, its ability to serve as a flexible platform, and the entities that can provide DR should be part of a comprehensive assessment of the program.

V. DR PROGRAM COSTS SHOULD BE SHARED BY ALL CUSTOMERS.

PG&E's bundled load, and therefore DR customer pool, is shrinking while PG&E's DR targets remain unchanged. PG&E expects approximately one million customers will take CCA service by the end of summer 2017 -- nearly 20% of the total electric customer base of 5.3 million[6]. By 2020, PG&E expects to have up to half of bundled customers migrate to CCA service.[7] Statewide projections indicate that IOUs could lose up to 80% of their load to CCAs.[8]

Such levels of load migration have significant implications on the IOUs' ability to meet and support California's clean energy goals and DR targets. Moreover, the Competitive Neutrality Cost Causation Principle that is currently being developed by the CPUC could further exacerbate this

[5] For the upcoming 2018-2022 cycle, the CPUC capped the budget at the 2017 annual funding level until the mid-cycle review in 2020. [Reference: D. 16-09-056, O.P. 12]. Moreover, the composition of the budget changed from 2017 in that BIP incentives (~$31.8M) are now included in the budget while DRAM funding of $12M was removed. The net effect on a normalized basis is that the annual budget from 2017 to the 2018-2022 cycle actually decreased by $9.7 million per year [Reference: PG&E A. 17-01-012, p. 6-2, Table 6-1]. Going back further, the annualized budget for the 2015-2016 cycle dropped by $13.6[5] million compared to the authorized level from the 2012-2014 cycle. [D. 12-04-045 (2012-2014 cycle) annualized budget was $63.9N while D. 14-05-045 (2015-2016 cycle) annualized budget was $50.3M. The difference in the annualized budget from the two cycles is $13.6M].

[6] Link: http://www.pgecorp.com/corp_responsibility/reports/2017/bu01_pge_overview.html

[7] PG&E's 10-Q for Q2, 2017, p. 59. (Link: http://d18rn0p25nwr6d.cloudfront.net/CIK-0001004980/1653cac9-e189-4133-8a42-60c0356daf2d.pdf)

[8] January 27, 2017 PG&E ex-parte notice on a Joint IOU meeting held with utility executives and CPUC Advisors and Chief of Staff.

challenge if state goals and mandates that apply to IOUs do not equally apply to CCAs and ESPs. The Principle could, among other things, require IOUs to unwind their DR programs and the associated costs when similar programs are offered by CCAs and ESPs in their service territories.[9]

VI. THERE ARE INCONGRUITITIES BETWEEN HOW DR IS DISPATCHED WITH THE GOALS OF TARGETING DISADVANTAGED COMMUNITIES.

CPUC Commissioner Guzman Aceves asked about using DR and local RA in Disadvantaged Communities (DACs) and requested input from regulators and stakeholders to better define how the CPUC views DR's ability to displace peaker facilities and improve DAC scores. This question suggests that the focus of DR might be to mitigate the "Pollution Burden" indicator in the CalEnviroScreen Tool.[10]

However, there are many issues to consider when assessing whether DR can impact a DAC score. Different geographic footprints is a primary issue. The geography of a Local Capacity Area (LCA) is generally incongruent with a DAC, as the geographic footprint of a DAC (i.e., census tract) is often much smaller than an LCA (e.g., the San Francisco Bay Area is one LCA). As a result, it is unclear whether DR can meaningfully make an impact on DACs based on how a majority of DR programs have been designed and were ordered to continue for the 2018-2022 DR cycle. If the Commission deems it appropriate to change the granularity to which DR programs are called, PG&E recommends it be done consistently across rulemakings.[11] Finally, given PG&E's energy deliveries in 2016 were about 70% carbon free, it is unclear how significant the benefits of using DR to mitigate the "pollution burden" in DACs would be. Given transportation is the highest emitting greenhouse gas sector in the state, inclusion of the transportation sector is critical in assessing how to mitigate the "pollution burden" in these communities.

A State-Agency-led process should be developed to identify DACs that could potentially benefit from DR measures (or broader energy procurement activities), as it is unclear if DR or any energy or capacity solution could appreciably impact a DAC score. Regardless of the agency tasked with identification, there needs to be coordination between the CPUC (i.e., approving the DR measure), the CEC (i.e., jurisdiction for thermal facilities over 50MW[12]) and the CAISO (i.e., ensuring reliability can be maintained).

VII. DER/DR PENETRATION LEVELS IMPACT ON TRANSMISSION AND DISTRIBUTION (T&D) INTERFACE ISSUES IS HIGHLY VARIABLE.

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[9] D.14-12-024 OP 8(B) states: "Once a direct access or community choice provider implements its own demand response program, the competing utility shall, no later than one year following the implementation of that program: i) end cost recovery from that provider's customers for any similar program and ii) cease providing the similar program to that provider's customers."

[10] This is a CalEPA tool that is utilized to identify Disadvantaged Communities:
Link: https://oehha.ca.gov/media/downloads/calenviroscreen/fact-sheet/ces30factsheetfinal.pdf

[11] Clarification on how using DR to displace fossil fuel peakers in DACs is also being considered in the DRP (R. 14-08-013) and IDER (R.14-10-003) Rulemakings. Moreover, the IRP (R. 16-02-007) Rulemaking is tasked with identification of resource needs on a broad basis consistent with AB 350. Therefore, the umbrella IRP forum should be used as a starting point for assessing opportunities for the displacement of fossil resources.

[12] The CEC has statutory responsibility for licensing thermal power plants 50MW and larger.
Link: http://www.energy.ca.gov/sitingcases/

CEC Commissioner McAllister asked at what level of participation DER and DR penetration cause transmission and distribution interface issues. From PG&E's perspective, it is not possible to provide an absolute number for every circuit.

Highlighted T&D interface issues stem from the current lack of visibility, control, and situational awareness that Distribution Operators have on the distribution system for dispatching DERs to meet broader system needs. The need for visibility, control, and situational awareness to capture adverse distribution impacts may be more significant with higher penetration of DER, but providing a penetration value as a proxy for the more fundamental distribution impact factors of: locations/spread of DERs on a given feeder, DER operating characteristics, feeder topology, and equipment ratings/settings and load profiles is still in flux. For example, the fundamental distribution impact factor of DER operating characteristic is still undetermined due to many ongoing policy considerations. Accordingly, it is not possible to recommend a penetration value at this time.

These issues are being discussed in the More than Smart T&D Interface working group[13] and more information can be found in the More Than Smart Workgroup Whitepaper, "Coordination of Transmission and Distribution Operations in a High Distributed Energy Resource Electric Grid."[14]

VIII. RE-EVALUATION OF THE ONE LSE/DR RESOURCE RULE IS NEEDED.

PG&E agrees with the CAISO that the rule of one LSE/DR resource is not sustainable and recommends the re-evaluation of this rule, including the current CAISO implementation of the Default Load Adjustment (DLA). PG&E recommends that the CAISO assemble a working group to address this issue and to encourage new entities (i.e., DER providers) and non-IOU LSEs (i.e., CCAs, ESPs) to participate in the discussion. This rule, as currently written, has impacts to all LSEs wholesale resource creation, operation and settlements. With current projections that up to 80% of IOU load may be migrating to CCAs, the Joint IOUs (PG&E, SCE and SDG&E) energy portfolio to be served by various non-IOU LSEs[15] and up to half in PG&E's territory by 2020 going to other non-IOU LSEs[16], it is critical that these new entities and non-IOU LSEs be part of the reassessment of this rule so that greater amounts of DR can participate in the CAISO market.

IX. MORE NEEDS TO BE DONE TO REDUCE THE BARRIERS FOR THIRD-PARTY DIRECT PARTICIPATION.

PG&E supports third-party direct participation for DRAM. As noted by Bruce Kaneshiro of the CPUC's Energy Division, DRAM procurement has grown, but critical questions remain, particularly whether DRAM DR providers can provide cost-competitive and reliable capacity that meets the needs of an evolving grid. The Energy Division's analysis of the DRAM pilot is

13 *http://morethansmart.org/t-d-operations-interface-working-group/*

14 *More Than Smart. "Coordination of Transmission and Distribution Operations in a High Distributed Energy Resource Electric Grid." June 2017.* http://morethansmart.org/wp-content/uploads/2017/06/MTS_CoordinationTransmissionReport.pdf

scheduled to be completed in June 2018, and additional stakeholder discussion on the future of DRAM, including how the pilot structure could be transitioned to a permanent mechanism, will be valuable. In particular, maximizing DR's value requires a procurement process that is based on least-cost, best-fit evaluation principles that fit within the larger context of the CPUC's goals of establishing a more holistic approach to resource procurement in the IRP proceeding. That concept requires reconciliation with the Commission's direction in D.16-09-056, which could require utilities to offer contracts to all complying bids up to the simple average August capacity bid prices, and procure up to 1 GW across the three IOUs.[17]

PG&E has also committed to accelerating and expanding Rule 24 implementation for DRAM and non-DRAM participation in the CAISO wholesale markets. PG&E supports Rule 24 registrations in the CAISO wholesale markets for day-ahead energy, real time energy, and ancillary services. However, when residential customers choose to participate in CAISO's ancillary service and real time energy markets, it requires reprogramming residential customer meters from hourly intervals to 15-minute intervals. PG&E is working with DR providers and other stakeholders to streamline and simplify the process for customers to securely authorize the release of their data to third-party DR providers. That proposed process is pending CPUC approval.

X. ENERGY EFFICIENCY (EE) AND DR ARE NOT "ONE AND THE SAME."

CEC Commissioner McAllister requested stakeholder feedback on the CPUC's approach to EE-DR integration. PG&E interprets the CPUC proposal as a "limited" integration of certain EE and DR programs. It is not meant to be a complete melding of EE and DR programs. The unique history, regulatory requirements and challenges associated with EE and DR programs are sufficiently distinct that PG&E cautions against considering EE and DR as "one and the same." Assumptions about DR following the path of EE is speculative in light of the vision to expand DR from a peak shaving tool to one that can support broader grid needs required for renewables integration. PG&E and other parties' comments on this topic have been submitted to the CPUC.[18]

XI. TELEMETRY IS A BARRIER TO EXPANDED DR.

At the workshop, the California Large Energy Consumers Association indicated that telemetry is a barrier to expanding the quantity and types of DR on the grid. Telemetry requirements apply to energy resources of greater than 10 MW and any amount of ancillary services. Currently, work-arounds are used to avoid triggering the telemetry requirements for energy resources. However, these work-arounds result in unintegrated DR MWs, lack scalability, and do not solve for ancillary services.

The telemetry barrier has both technical and business model components to it. Through PG&E's DR Emerging Technologies program, a low-cost, DR provider-agnostic solution was tested for

[17] In addition, D.16-09-056 states utilities are not obligated to accept bids priced above the long term avoided cost of generation at the time of the auction and bids in which non-August capacity prices are outliers.

[18] See DR Application (A. 17-01-012) and EE Application (A. 17-01-013).

technical feasibility in a lab environment in 2016.[19] Additional testing of this solution's technical feasibility is currently undergoing a field study.

As noted in CAISO's slide deck, "Telemetry as a Service" could be one component to a future business model, as there is a need for ongoing monitoring to ensure that any telemetry hardware deployed continues to provide reliable data and remains online. A key part of this is ensuring that telemetry is financially viable. PG&E is eager to collaborate with other stakeholders on this topic and recommends that telemetry be recognized as a significant existing barrier to expanding the amount and types of DR in California.

XII. CAISO CHANGES ARE NOT ALWAYS IMMEDIATELY IMPLEMENTABLE.

The CEC's August 8th meeting discussed updates that would require DRPs to calculate the baseline and CAISO indicated these updates would be implemented in Spring of 2018 at the earliest. This timeline is questionable, given once the CAISO develops the business requirements, PG&E will evaluate whether additional resources are needed to implement the update, as well as whether additional funding is needed from the CPUC.

PG&E thanks the CEC again for the opportunity to comment on the August 8, 2017 IEPR Workshop on DR and appreciate the Commission's consideration of our comments. We look forward to continued collaboration on this topic.

Sincerely,

/s/

Wm. Spencer Olinek

19 *CAISO Telemetry Solution Over Broadband Lab Test and Proof of Concept;* Searchable via: www.etcc-ca.com/reports