

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

Order Instituting Investigation on the
Commission's Own Motion to Determine Whether
Pacific Gas and Electric Company and PG&E
Corporation's Organizational Culture and
Governance Prioritize Safety.

Investigation 15-08-019
(Filed August 27, 2015)

**Opening Comments of the Center for Climate Protection
in Response to Assigned Commissioner's Scoping Memo and Ruling**

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February 13, 2019

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Pursuant to the *Assigned Commissioner's Scoping Memo and Ruling* ("Scoping Memo") in this proceeding, dated December 21, 2018, the Center for Climate Protection hereby submits the following comments.¹ These comments are timely filed under Rule 11.6 of the Commission's Rules of Practice and Procedure and in accordance with the *E-Mail Ruling Granting Extension of Time*, dated January 22, 2019, by Administrative Law Judge Peter V. Allen.²

I. Introduction

The Center for Climate Protection ("CCP") is a California 501(c)(3) nonprofit organization founded in 2001 with a mission to inspire, align and mobilize action in response to the climate crisis. CCP thanks the Commission for raising the important questions posed in the Scoping Memo and inviting suggestions from all parties regarding alternatives to PG&E's current management and operational structures. Critical review of PG&E's corporate governance, structure and operations, and

¹ *Assigned Commissioner's Scoping Memo and Ruling* ("Scoping Memo"), December 21, 2018, at 14.

consideration of alternatives, are urgently needed not only to address immediate concerns about safety and reliability of electric and gas service in the face of increased environmental volatility (e.g., ongoing fire risks), but also to determine how PG&E can best be structured to implement California's energy policies, particularly decarbonization of our energy systems and of the economy more generally, and climate adaptation.

The list of factors the Commission says it will consider in evaluating proposed alternatives includes the following:³

- the ability of the state to implement its energy policies, including the need to reduce greenhouse gas (GHG) emissions and local criteria pollutants in both the utility sector and the economy as a whole;

Thus the Commission clearly recognizes that this proceeding must look not only at near-term concerns about safety and reliability in the face of more extreme and unpredictable disruptions; it must also consider how PG&E will be able to most effectively fulfill its roles and responsibilities in achieving California's decarbonized future. It is this latter concern to which CCP focuses its comments and offers a proposal for modifying PG&E's structure, regulatory framework and incentives. That said, although CCP's proposal emphasizes the utility's role in California's longer-term energy policy goals, CCP believes that its proposal will also address the near-term concerns outlined in the Ruling.

CCP's comments focus on the electric power system; we do not address the gas system, which has a distinct set of issues related to the fact that its long-term use is not likely to be compatible with decarbonization. We also do not focus on the safety matters

² *E-Mail Ruling Granting Extension of Time*, January 22, 2018, at 5.

described in Section 2 of the Ruling. Finally, to simplify the presentation of the proposal, these comments start with the assumption that PG&E will continue to provide electric distribution service in California, provisionally setting aside possibilities of more severe restructuring of PG&E, for example to increase public ownership and control of the distribution system. This assumption is not essential, however; the substance of CCP's proposal is to describe a distribution utility structure that will best serve California's policy goals, and as such it would be equally applicable to another entity or entities that take on operation of the electric distribution system in PG&E's current service area.

II. Overview

CCP believes that for California's energy systems to move into the 21st century and achieve the decarbonization demanded by climate disruption, a number of fundamental structural changes in the power sector roles of the investor-owned utilities ("IOUs") are required. Thus, although PG&E is the focus of the Commission's present inquiry as described in the Ruling, and CCP fully recognizes the need to make changes to PG&E in the near term, the structural changes CCP proposes would be applicable to the other IOU distribution utilities and could thereby serve as the basis of a uniform regulatory framework for reforming electric distribution service.

There has been a persistent lack of resolution in recent years regarding the "new utility business model" for the IOUs, even amid a continuing flurry of expert industry panels and papers on the topic. The Commission's approach so far has been to avoid discussing the topic in the policy realm, leaving it to the IOUs themselves to decide what they want to be in the 21st century, with a strong bias toward business-as-usual

³ Scoping Memo at 2.

emphasis on owning more costly assets to be recovered on a monopoly basis from ratepayers. The Commission's present Investigation and the wide-ranging ideas about PG&E's future provide an opportunity to develop and evaluate diverse possibilities to find the best path forward. In that spirit CCP's proposal is comprised of the following major elements, summarized here and described in further detail in later sections of these comments.

The logic of this proposal rests on clear distinctions between the four functional roles that comprise the traditional vertically-integrated utility: generation ("G"), transmission ("T"), distribution ("D") and retail ("R").⁴ California's electric restructuring in the 1990s, following the changes in federal law and energy regulation at that time, separated G from T and established a framework for open-access transmission service and a wholesale power market operated by the California Independent System Operator ("CAISO"), who by design is independent of transmission system users and market participants. To date, however, no analogous clear separation between D and R has yet been defined, and this lack complicates current thinking about the optimal architecture for the 21st century electric system.

The R function is the responsibility of the load-serving entity ("LSE"); it entails procuring energy and capacity to serve retail end-use customers and meet related requirements including renewable portfolio standards and resource adequacy. With the

⁴ The G function refers to wholesale supply of electricity, i.e., the owners and operators of generating facilities and the power marketers who are the sellers in wholesale bilateral and spot power markets. The R function refers to the load-serving entities who serve retail end-use customers and are the buyers in wholesale bilateral and spot power markets. Since the restructuring of the 1990s G and R are no longer considered natural monopolies. In contrast, the T and D functions, the transmission and distribution "wires" functions respectively, are still viewed and regulated as natural monopolies.

opening of retail direct access in the 1990s and continuing today, the D “wires” function is still seen and regulated as a natural monopoly service, whereas R in California’s IOU service areas is open to alternative providers, i.e., the community choice aggregators (“CCAs”) and the retail electricity service providers (“ESPs”). Thus the “bundled” retail service provided by the IOU LSEs includes both monopoly and competitive activities, and thus the monopoly D function has no clear boundary.

CCP’s first recommendation is for the Commission to adopt the four-fold functional model for purposes of considering any changes to PG&E’s regulatory framework, with specific focus on clarifying the distinct roles and responsibilities of PG&E’s T, D and R functions. In this model, assuming PG&E continues to be the owner and operator of its current physical assets, its D function remains a regulated monopoly service, but the Commission must specify clear boundaries between natural monopoly distribution assets and activities versus areas where an open competitive structure will enable new technologies and business innovation to deliver the greatest benefits to electricity customers and minimize risk of stranded assets. These ideas are developed in greater detail in section 3 below.

PG&E’s T function is to a great extent, but not entirely, derived from its status as a participating transmission owner (“PTO”) in the CAISO. Questions of safety, however, particularly related to wild fires and other climate volatility risks, are clearly central concerns of the state for both the T and D functions, as described in the Ruling, and CCA’s proposal would not hamper Commission action in this area in any way. PG&E’s R function is discussed in section 4 below.

Second, the Commission should reform PG&E’s D function in several ways to align its operations, business model and incentives with state policy goals for

decarbonization and resilience, and to enable all residents in PG&E's service area to realize maximum benefits from the proliferation of distributed energy resources⁵ ("DER"), a phenomenon that is occurring not only in California but worldwide. DERs offer vast potential benefits to both energy end-users and to the whole power system, but today some of the benefits are barely recognized much less quantified, and there are substantial barriers to DER commercial viability that regulatory reforms could address.⁶

The central concept for reforming PG&E's D function is to create an "open-access" distribution system operator ("DSO") structure analogous to FERC's open-access rules for transmission, as illustrated by the CAISO's use of transparent market mechanisms for allocating transmission service, its relationship with the PTOs, and its independence from the participants in the wholesale market. This does not necessarily require a new entity like an independent DSO ("IDSO"), but it does mean that the DSO function will need to support several key elements, including but not limited to:

- Well-defined grid services that third-party DER providers, including energy end-users with customer-side DER, can provide to the DSO through non-

⁵ These comments use the term "distributed energy resources" ("DER") broadly to mean the full range of electricity resources connected to the power system at distribution level, on either the customer side or the utility side of the end-use meter, as well as smart inverters and advanced control technologies to optimize their use for both meeting the needs of energy customers and providing grid services to support reliable, efficient power system operation.

⁶ See Scott Murtishaw (January 2019) "Barriers to maximizing the value of behind-the-meter distributed energy resources," California Solar & Storage Association. This paper provides a detailed examination of DER-related issues raised in some key Commission proceedings and offers specific proposals for how to address them. CCP is not commenting one way or other on Mr. Murtishaw's specific recommendations, but we suggest that reforming the regulation of the D function as proposed here will create a more favorable context for DER proliferation that will simplify resolution of many of the more granular issues Mr. Murtishaw identifies. <https://static1.squarespace.com/static/54c1a3f9e4b04884b35cfef6/t/5c509f774ae23756e03f6161/1548787577591/CALSSA+Whitepaper+on+DER+Barriers-Jan2019.pdf>

discriminatory and transparent procurement mechanisms and be fairly compensated for;

- An open, participatory distribution planning process that provides sufficient information on identified upgrade needs and an open window for third parties to submit preferred-resource alternatives and have them fairly evaluated;⁷
- Streamlined interconnection processes to facilitate development of community-level DER (such as solar+storage) on the utility-side of the meter and formation of community microgrids to ensure continued availability of power to critical and priority facilities in the event of a major system disruption and to enable safety-related de-energizing of a line under high-risk conditions;
- Transparent real-time operating procedures that govern curtailment of DER or other mandatory operating instructions, to ensure such procedures are non-discriminatory in their application to third-party assets; and
- A data access framework that enables efficient realization of the above elements.

Third, the Commission should develop performance-based regulatory (“PBR”) rules and incentives for PG&E’s reformed DSO function. The central concept of PBR is to shift the basis of the utility’s profits from return on assets to well-defined metrics that measure the quality of the DSO’s performance of the activities it is responsible for. Under a PBR structure PG&E could still recover the costs of infrastructure investments, but at a rate of return that’s close to its actual cost of capital rather than as a basis for profit.⁸

Finally, the Commission should recognize and facilitate the crucial role to be played by local governments and communities in achieving California’s climate and energy goals, in creating greater resilience for the more volatile environment we now

⁷ The CAISO’s annual Transmission Planning Process (“TPP”) offers a useful model for how a new distribution planning process could be structured.

⁸ There is a vast amount of industry research and expertise on the subject of PBR to assist the Commission in formulating effective rules and incentives for PG&E. See, for example, Regulatory Assistance Project (May 2018) “Next Generation Performance Based Regulation.”

inhabit, and in addressing equity issues and the needs of disadvantaged communities.⁹

On that point, the Commission's list of evaluation factors includes the following:¹⁰

- the utility's relationships with and role in local communities

To that end the Commission should direct PG&E's DSO function to be an effective collaborator with local governments and their relevant agencies to develop and implement electrification and resilience-related energy projects that address community needs in alignment with power system benefits. In essence this means crafting a convergence between power system planning and city/county planning. PG&E's performance on this requirement should be an element of its PBR-based compensation. The rest of this filing is organized as follows: Section III. describes some outcomes and desirable features of a future decarbonized California energy landscape that may be viewed as targets or objectives to which energy policies should aim. Section IV. identifies legacy 20th century features of PG&E's current structure and regulatory framework that are in conflict with the desired future. Section V, then outlines CCP's proposed changes to the current structures, and Section VI. offers a transition approach.

III. Getting to California's Decarbonized Future

Consider California's energy landscape in 2030, starting with the electric power system which must deliver 60 percent renewable energy by then. While much of the

https://www.raponline.org/knowledge-center/next-generation-performance-based-regulation-volume-2-primer-essential-elements-of-design-and-implementation/?_sf_s=PBR

⁹ For expanded discussion of this idea, see Lorenzo Kristov (November 27, 2017) "Comments in response to the October 31, 2017 informal public workshop on California Customer Choice." [http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Energy - Electricity and Natural Gas/Lorenzo%20Kristov%20Comments.pdf](http://www.cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/Utilities_and_Industries/Energy_-_Electricity_and_Natural_Gas/Lorenzo%20Kristov%20Comments.pdf)

¹⁰ Scoping Memo at 2.

industry is polarized by a debate between a vision of the future dominated by bulk electric system (“BES”) renewable resources in an optimized western regional grid versus a future dominated by rapid growth of DERs and community power systems,¹¹ the power system in 2030 should be a blend of the two for reasons discussed below. Today’s power industry institutions and the dominant industry culture are biased, however, toward building “utility-scale” BES infrastructure and are not conducive to growth of DER and community power systems. So it is important to understand why DER and community power systems are valuable and even crucial to California’s goals, and to implement changes to PG&E’s regulatory framework and incentives that will promote their growth.

DER and community power systems offer the following capabilities and benefits that can shape a reliable, efficient, low-carbon California power system by 2030:¹²

- 1. Electrification.** A major share of projects and strategies to electrify transportation and buildings and more broadly reduce carbon emissions from all sources will come about through city and county planning. General plans deal with such matters as zoning, building codes, housing densification, affordable

¹¹ These comments use the term “community power system” to mean a system of carbon-free DER and provisions for coordinating their operation, designed and implemented through state-local collaboration to: (a) support the reliable operation of a carbon-free, secure and efficient electric power system; (b) meet local energy, resilience and electrification needs; (c) achieve California’s environment, energy and equity goals; and (d) provide economic, employment and other benefits to communities.

¹² The year 2030 holds a number of key milestones in California policy. Senate Bill 100, signed into law by Governor Brown in 2018, requires electricity consumed in the state to be 60 percent from renewable supply resources by 2030. SB-32 passed in 2016 requires a 40 percent reduction in greenhouse gas emissions below 1990 levels by 2030, and a Governor’s executive order sets a 2030 target for 5 million zero-emissions vehicles. For additional milestones and targets see the California Air Resources Board’s Scoping Plan: <https://www.arb.ca.gov/cc/scopingplan/scopingplan.htm>

housing, traffic and mobility services, land use and habitat protection, etc. As buildings, transportation, and agriculture come to rely more on electricity, coordinating power system planning with city and county planning will enable optimal tradeoffs between local DER and BES-level supply, electrifying current fossil-fuel uses in the most cost-effective and societally beneficial manner.

- 2. Shaping net load and managing volatility.** Customer adoption of DERs will continue to grow with declining costs and increasing capabilities of new local-scale technologies. Combined with electrification-driven demand growth, the resulting increased volatility and extreme production and net load profiles at the grid edge and the circuit level (e.g., “ducklings”) can be managed locally using flexible DER and storage at various scales, rather than exporting grid-edge impacts upstream to create operational challenges at the BES level.
- 3. Alternatives to expanding costly and vulnerable grid infrastructure.** There is no reason anymore to build T and D infrastructure to meet peak loads that occur infrequently and leave vast amounts of capacity underutilized most of the time. Flexible DERs, including load management and control systems, can create relatively flat net load profiles at both circuit level and BES level, enabling rapid growth of carbon-free local energy supply without driving costly T and D capacity expansion. (Adoption of PBR as noted above will mitigate incentives to expand grid infrastructure.) Relatively flat, predictable net load profiles at T-D interfaces can reduce congestion and increase capacity factors on the BES, enabling it to move renewable energy around the western region with less need to invest in massive new grid infrastructure.

4. Resilience. While resilience has become a national hot-topic with many notions about what it means and how to achieve it, disruptive events always have local impacts that can drastically affect people's lives, in many instances fatally. At the local level, resilience measures include both the capability of essential services and infrastructure to withstand more extreme events and continue functioning, and the ability to quickly restore or substitute for essential services that fail, for which continuity of electricity supply is crucial. Thus a local resilience strategy is to create power systems at different levels that can operate as electrical islands, generally called microgrids. A microgrid can be entirely on the customer side of the meter, e.g., an individual building or a campus that does not rely on DSO facilities or services upstream of the point of interconnection, to enable a critical facility such as a hospital or emergency shelter to operate off-grid. A microgrid can also serve a larger community by coordinating the operation of multiple single facilities and utility-side DERs to sustain electric service over one or more distribution circuits on the DSO grid and coordinated with the DSO's distribution service.

5. Local and statewide economic benefits. Once we start to advance community power systems designed and implemented collaboratively with the DSO, it opens up numerous job opportunities and diverse economic benefits for disadvantaged communities, local governments and all their residents.

To summarize, DER and community power systems offer the potential to achieve major advances in electrification of transportation and buildings with little increase in demand on the BES, even though total electricity consumption will be much greater than today. Key to this outcome is for PG&E's reformed DSO to partner with local

planning in all communities across the state. As a result, new electrification demand can mostly be met with local supply and storage resources, while new energy efficiency programs implement weatherization retrofits in the state's entire building stock, and customer-side of the meter technologies transform electricity users into flexible resources providing grid services. These local programs can provide hundreds of thousands of well-paying jobs and bring economic benefits to low-income communities, while also reducing congestion on the western grid and moving power from wind and solar rich areas to population centers without having to build massive new infrastructure.

Now consider how California can decarbonize major fuel-intensive activities outside of the electric grid itself, mainly transportation and buildings. Transportation electrification requires much more than people swapping a combustion engine for an electric vehicle. By 2030, with bold initiatives by local governments and state support for planning and projects in all communities, reliance on private cars in urban areas can be diminished immensely. To take climate adaptation and decarbonization seriously, city and county planning must place sustainability and resilience at the center of all decision making, such as: densification in core areas rather than sprawl; affordable housing close to public transit hubs and close to where people work; motor-vehicle-free downtown areas with new mobility services to move people to and from their destinations; building codes that require energy efficient buildings and all-electric new construction (avoiding new gas infrastructure that will soon be stranded); micro-grid features to enable critical and priority facilities to operate as electrical islands; natural sustainability measures such as tree canopy, storm water capture and aquifer replenishment, as well as insect, bird and wildlife habitats and corridors. Many of these

measures point to a need for collaboration between electric distribution system planning and city/county planning. The next two sections describe the legacy industry structures in need of updating and the policy actions to achieve the needed reforms.

IV. Legacy Utility Structure Does Not Well Serve 21st Century Needs

To identify the most effective policy changes it is necessary first to understand how PG&E's existing structure and the regulatory and incentive framework in which it operates constrain California's ability to achieve rapid cost-effective decarbonization throughout the state. The existing structure was created in the last century to expand energy service and supply infrastructure and grow energy consumption rapidly. But now society's needs have shifted while the existing structure continues to embody these legacy characteristics:

1. Expensive large-scale infrastructure is paid for by captive customers

through regulated retail rates. Traditional power system investment is supply focused, assuming demand to be exogenous, resulting in excess capacity most of the time, with all risk of stranded investment placed on ratepayers, not on the utility companies or their investors. Today DERs are able to both meet and shape electricity demands close to their source to dramatically reduce the need to invest in BES and distribution system infrastructure even while consumption grows due to electrification. The Commission needs to align DER investment incentives and opportunities with this new reality.

2. PG&E's compensation is based on the cost of physical assets rather than the quality of service, which incentivizes them to develop large infrastructure projects and to impede growth of DER that can offset the

need for large infrastructure.¹³ Today the impediments appear in the form of costly interconnection procedures, opaque distribution planning processes with limited opportunities to adopt carbon-free non-wires alternatives, and complex regulatory proceedings moving very slowly to open the field for competitive, cost-effective DER services. Planning processes and selection of preferred solutions would provide ratepayer/customer benefits by adopting more cost-effective technology solutions with less risk of stranded assets, but this requires tying PG&E's DSO compensation to clear metrics for performance of its defined roles and responsibilities.

- 3. Lack of clear boundary between PG&E's "natural monopoly" functions (e.g., the systems of wires and transformers) and functions where open competition would improve results for energy customers (e.g., investment in "grid edge" devices like EV charging stations).** When FERC created the framework for wholesale power markets in the 1990s, the central principle was open-access transmission service, which is provided in most of the country today by independent system operators, unaffiliated with market participants and with the owners of the transmission assets under their operational control. Today in California there is still no similar unbundling of PG&E's distribution function. One consequence is that as PG&E seeks to expand rate-based asset holdings into new technology areas, they enjoy competitive advantages by, for example, having unique access to customer data held by their distribution function and

¹³ This is a likely factor in IOUs' opposition to CCA programs. A central mission of CCA programs is to develop local resources to meet local needs, to reduce reliance on the grid while also using the resources to provide grid services.

reduced risk due to guaranteed cost recovery through rates. An urgent issue for the Commission is to define new boundary principles between PG&E's regulated monopoly functions and competitive functions, so as to realize the greatest societal advantage to the vibrant technology innovation in progress today.

- 4. PG&E has a huge service area under a regulatory framework that requires uniform service offerings and cost allocation and precludes providing more tailored services to different communities.** This is also a legacy structure based on historic economies of scale and the construct of electricity as a homogeneous commodity that can only come from the grid. Today these rationales no longer apply, and the new goals of electrification and resilience require locally-designed DER-based energy systems. Until the advent of CCA programs, the only way for a local government to shape its energy supplies and practices was to form a municipal electric utility. But at this moment the CCA model is preferable to municipalization because it leaves in place PG&E's distribution wires function, retains its workforce and expertise in distribution system planning and operation and avoids the need to transfer ownership of assets. If the Commission adopts requirements for partnership between PG&E's DSO function and local governments, including CCAs where they exist, it can expedite locally-based electrification and resilience initiatives and offer a viable 21st century DSO business model for PG&E.¹⁴
- 5. Too much weight is placed on benefit-cost analysis ("BCA") as a basis for policy and investment decisions.** It claims to be an objective tool for making

decisions, but in practice it cannot objective,¹⁵ so its results should be seen as data points, not definitive answers. BCA's results depend on which benefits and costs are included and how they are measured. But policy decisions are future oriented, intended to achieve some benefits that may not yet have measurement methods. Indeed, benefits of greatest concern in the era of climate disruption — e.g., local resilience and our grandchildren's quality of life — have thus far been too hard to quantify. Thus BCA has an inherent bias toward preserving the status quo, and therefore it's often used to preclude an otherwise feasible, desirable solution on the grounds that it "doesn't pencil out." As the Commission considers alternatives to address the issues raised in the Ruling, it should bring these urgent but hard-to-quantify, hard-to-monetize societal values into the center of the proceedings.

V. Elements of a 21st Century Electricity Policy Framework

CCP recommends that the Commission approach reforms to PG&E's current structure through adoption of the following major elements:

1. Reform PG&E's electric distribution (D) function to become a distribution system operator (DSO), based on an open-access structure analogous to the CAISO's structure for providing non-discriminatory transmission service and operating wholesale spot energy markets, but designed for the unique characteristics of electric distribution systems.

¹⁴ Municipalization or state ownership of distribution could be a longer-term strategy if a workable DSO model for PG&E proves too elusive.

2. The open-access structure should include a distribution-level market whereby participating energy customers, DER providers and LSEs can develop and be compensated for grid services to the DSO, including deferral of new grid assets and upgrades as well as real-time operational services such as voltage support and phase balancing. The framework must clearly define details of distribution grid services, including performance requirements, dispatch, measurement and compensation. It must be non-discriminatory with regard to system planning, interconnection procedures and real-time operations such as curtailments, and these activities must be subject to clear transparency standards and supported by an effective data access framework. This will create a needed foundation for expanding cost-effective DERs on the system, for the commercial viability of DER innovators and providers, and for designing local electrification and resilience projects.
3. Develop and adopt PBR rules and incentives for PG&E's DSO that measure the DSO's performance on specific roles and responsibilities and compensate the utility based on those measures.
4. Include in the PG&E DSO's mandate a requirement to partner with local governments to develop and implement electrification and resilience projects, bringing together city and county planning with power system planning.
5. Implement data access provisions for PG&E's DSO that enables cities and counties to plan electrification and resilience projects and third-party DER developers and CCAs to develop local resources to implement those projects. It

¹⁵ "In theory there's no difference between theory and practice; in practice there is." — Often

is both necessary and possible to protect customers' rights to privacy and control of their own data without placing the control under a for-profit monopoly. Having customer data under PG&E's control is a single major impediment to enabling the demand side to become effective managers of their own impacts on the grid and providers of grid services. From a cost perspective, data access is yet another challenge to developing non-wires alternatives to grid infrastructure upgrades.

6. Redesign distribution system planning to accommodate broad electrification, resilience and DER growth, and to include an analog to the "loading order" in procurement which establishes preferences for energy efficiency and active customer participation in grid operational needs, and for carbon-free, DER-based non-wires alternatives to grid infrastructure. Distribution planning must become transparent and include meaningful stakeholder participation and opportunities to offer alternative solutions. Distribution planning must also address staged, "no regrets" approaches to grid modernization, with PG&E's compensation for such investment based on performance of distribution services rather than return on assets.
7. With separation of PG&E's D function from its R function, the Commission needs to reconsider the roles and responsibilities of PG&E's R function going forward. PG&E's retail kWh service will no longer be "bundled" as it has been historically but will be provided by a distinct functional unit of PG&E whose relationship to the reformed DSO is comparable to that of other LSEs. With so much of PG&E's

attributed to Yogi Berra.

load migrating to CCAs, and given the greater flexibility CCAs have to develop local resources to meet local needs and provide grid services (especially in the context of the DSO reforms CCP proposes), it is reasonable to ask whether PG&E wants to retain its LSE function. If PG&E's R function is no longer under a regulated monopoly framework, it would seem logical to allow PG&E to make this decision for itself (setting aside issues related to bankruptcy). At the same time, there remains an open question about provider of last resort ("POLR"), i.e., the question of who provides retail service to a customer who opts out of a CCA or whose alternative LSE ceases to function. There are examples from other states of different approaches to POLR the Commission may consider in a proceeding on transition issues. In the meantime CCP recommends that the Commission not assign any additional procurement responsibilities to PG&E until these more basic utility structure provisions can be addressed.¹⁶

8. Although not discussed directly in these comments, CCP fully supports the Commission's adoption of strong oversight of PG&E's performance on reliability and safety of its T and D systems and explicit tying of PG&E's compensation to metrics in these areas as well as for the other responsibilities discussed above.

¹⁶ For example, the November 21, 2018 Proposed Decision in the Commission's Resource Adequacy Track 2 proceeding (R.17-09-020) proposes to assign the IOUs the role of central buyers for 100 percent of Local Resource Adequacy capacity needs starting in 2019 for the 2020 compliance year. CCP agrees with the many parties who have formally urged the Commission to defer assigning this role to the IOUs to take more time to consider alternative approaches; in view of the issues the Commission raises in this Investigation and the clear need for fundamental reforms to PG&E's structure, it does not seem prudent to assign such an important new function to PG&E at this time.

VI. Transition Considerations

CCP recognizes that the reforms we propose to PG&E's operational structure represent significant changes to today's arrangements. At the same time, these or similar reforms have been topics of industry discussions in California and other jurisdictions for many years, and some elements of the reforms are already being addressed to some extent in ongoing Commission proceedings. CCP suggests that the Commission could take up CCP's proposals as follows:

1. At the earliest feasible date open a rulemaking to define the functional elements and regulatory framework for PG&E's distribution function to become an open-access DSO, incorporating the elements described in Section 1 above. This rulemaking should also develop performance metrics for the DSO's roles and responsibilities and specify their use in determining PG&E's compensation.
2. Within the DRP proceeding (R.14-08-013), define the structure of a reformed PG&E distribution planning process, including stakeholder participation and information access provisions, that will facilitate coordination of power system planning with city and county planning for electrification and resilience, support design and implementation of community-level power systems and microgrids, and allow transparent comparison and adoption of zero-carbon DER alternatives to expanding grid infrastructure.
3. Within the IDER proceeding (R.14-10-003), develop the rules for a competitive distribution grid services market in which third-party DER providers, including end-users with customer-side DER, can provide and be fairly compensated for grid services to PG&E's DSO. The proceeding has already made some progress on grid services such as voltage support and congestion relief to support DSO

operation (see decision D.16-12-036), and now it needs to develop the details, including performance requirements, measurement, procurement mechanisms and compensation.¹⁷ These should be framed in a technology-neutral manner so as to foster innovation, competition and broad participation.

VII. Conclusion

CCP thanks the Commission for providing this opportunity to offer ideas and proposals for the reform of PG&E's management and operational structures. CCP believes that the recommendations we offer here will both provide a more solid basis for oversight of the safety and reliability issues the Commission's Ruling has raised and place PG&E on a path toward a structure that aligns with California's policy goals for sustainability, equity, and climate adaptation.

Dated: February 13, 2019

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¹⁷ Building on D.16-12-036, in 2018 PG&E, SCE and SDG&E jointly completed additional work to advance DER-based grid services and provided recommendations for next steps. See the Smart Inverter White Paper and Appendix: <https://aeic.org/committees/power-delivery/distributed-energy-resources-subcommittee/>

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