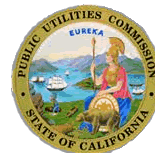


**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**



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Order Instituting Rulemaking to Create a Consistent  
Regulatory Framework for the Guidance, Planning and  
Evaluation of Integrated Distributed Energy Resources.

Rulemaking 14-10-003  
(Filed October 2, 2014)

**RESPONSE OF ENVIRONMENTAL DEFENSE FUND TO AMENDED SCOPING**  
**MEMO OF ASSIGNED COMMISSIONER AND JOINT RULING WITH**  
**ADMINISTRATIVE LAW JUDGE**

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Dated: March 29, 2018

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**I. INTRODUCTION**

Environmental Defense Fund (EDF) thanks the California Public Utilities Commission (CPUC or Commission) for this opportunity to offer responses to questions posed in the amended scoping memo, issued February 12, 2018.<sup>1</sup> In general, EDF is encouraged by the inclusion of locationally-based tariffs as a topic now within the proceeding's scope, because we have been a consistent and long-time proponent of the use of pricing based on a fair valuation of distributed energy resources (DERs) to advance environmental and social goals.<sup>2</sup> Through that lens, we offer responses to select questions included in the revised scoping memo.

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<sup>1</sup> *Amended Scoping Memo of Assigned Commissioner and Joint Ruling with Administrative Law Judge, Order Instituting Rulemaking to Create a Consistent Regulatory Framework for the Guidance, Planning and Evaluation of Integrated Distributed Energy Resources*, R. 14-10-003 (Feb. 12, 2018).

<sup>2</sup> *See, e.g., Opening Comments of Environmental Defense Fund on the Assigned Commissioner's Ruling Introducing a Draft Regulatory Incentives Proposal for Discussion and Comment, Order Instituting Rulemaking to Create a Consistent Regulatory Framework for the Guidance, Planning and Evaluation of Integrated Distributed Energy Resources*, R. 14-10-003 at 8 (May 9, 2016).

## II. RESPONSES TO SELECT QUESTIONS

1. ***Describe how a tariffed approach could be used to source distributed energy resources on an expedited basis. How would the amount of the tariffed payments be determined to ensure that distributed energy resources alternatives are cost-effective? Would the tariff be available to providers on a first-come, first served basis or should some other selection process be implemented?***

To answer this question, EDF breaks the above question into its component parts: (A)

Describe how a tariffed approach could be used to source distributed energy resources on an expedited basis; (B) How would the amount of the tariffed payments be determined to ensure that distributed energy resources alternatives are cost-effective?; and (C) Would the tariff be available to providers on a first-come, first served basis or should some other selection process be implemented?

By way of an introduction, EDF has been a strong advocate for using tariffs (and other incentive-based approaches) to source DERs. In the context of sourcing DERs to provide distribution services, EDF strongly supports using tariffed approaches to pursue the Commission's distribution system planning goals that include the following aspiration to

*...reflect these parallel goals: 1) to modernize the electric distribution system to accommodate two-way flows of energy and energy services throughout the IOUs' networks; 2) to enable customer choice of new technologies and services that reduce emissions and improve reliability in a cost efficient manner; and 3) to animate opportunities for DERs to realize benefits through the provision of grid services.<sup>3</sup>*

Economic theory and environmental and social justice goals lead EDF to seek determination of values that are reflected transparently and precisely in tariffs. DERs with the appropriate

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<sup>3</sup> Assigned Commissioner's Ruling on Guidance for Public Utilities Code Section 769 – Distribution Resource Planning, Order Instituting Rulemaking Regarding Policies, Procedures and Rules for Development of Distribution Resource Plans Pursuant to Public Utilities Code Section 769 at 3 (filed Feb. 6, 2015).

capabilities can be sited to capture value, both delivering real goods (e.g., energy) and services (e.g., voltage, frequency, and resiliency) and avoiding costs (of alternative distribution system investments and the costs of carbon and air pollution on health and the environment). Fair and appropriate prices that recognize that value will theoretically spur economically efficient build-out of DERs and grid-side DER hosting capacity. EDF explained this foundational theory in opening testimony in the residential rate proceeding, when stating,

*Economically efficient decision making occurs when consumers are (a) presented with underlying service costs, as revealed in energy prices, (b) encouraged and enabled to make their own decisions about how to manage their resulting electricity use. Simply put, if ratepayers know how much a unit of electricity costs, then they can optimize the quantity to purchase given their budget constraints.<sup>4</sup>*

This statement is particularly applicable in the presence of alternative DER sourcing strategies, notably utility-controlled solicitations, that involve several additional transactional costs embedded in the various steps of DER competitive solicitations. While solicitations may create competition, they do not occur in an efficient marketplace where property rights are well defined and enforced, there are no market actors with excessive power to influence trades, and where information is shared. In practice, the utilities control the problem definition, control information (since distribution grid data used to define the problem and the subsequent bids are not public), and determine what subset of values from a potentially value-laden DER portfolio they are willing to consider.

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<sup>4</sup> *Residential Rate Design Proposal of Environmental Defense Fund*, Order Instituting Rulemaking on the Commission's Own Motion to Conduct a Comprehensive Examination of Investor Owned Electric Utilities' Residential Rate Structures, the Transition to Time Varying and Dynamic Rates, and Other Statutory Obligations, R. 12-06-013 at 22-23 (May 29, 2013).

The flowchart illustrates the TOU Pilots process, starting with Rate Design and Customer Empowerment, leading to Increased utilization and optimization of DERs, and finally to DRAM, Storage, EV VGI, etc.

**Legend:**

- Pilots/Proceedings (Blue box)
- Findings/Questions to be tested (Green box)
- Supporting Data Sources (Orange circle)

**Process Flow:**

- Rate Design** (Green box) receives input from **Other costs (e.g. T+D, Consumer Programs)** (Orange circle) and **Price Signal for DERs (incentives and/or marginal prices based on DER locational values to be included in retail rate design)** (Green box).
- Rate Design** leads to **TOU Pilots** (Blue box).
- TOU Pilots** leads to **Customer Empowerment** (Green box).
- Customer Empowerment** leads to **Increased utilization and optimization of Distributed Energy Resources (DERs)** (Green box).
- Customer Empowerment** also receives input from **LBNL DR Potential Study** (Orange circle).
- Increased utilization and optimization of Distributed Energy Resources (DERs)** leads to **DRP** (Blue box).
- DRP** (Distributed Resource Planning) includes:
  - IDR** (Blue box) and **ICA** (Blue box) are connected by a bidirectional arrow.
  - IDR** leads to **Locational DER Value/Benefits to the Grid (regulatory, thermal, voltage, etc.)** (Green box).
  - ICA** leads to **Increased utilization and optimization of DERs** (Green box).
  - Locational DER Value/Benefits to the Grid (regulatory, thermal, voltage, etc.)** leads to **LNBA** (Blue box).
  - Increased utilization and optimization of DERs** leads to **LNBA**.
- LNBA** leads to **DRAM, Storage, EV VGI, etc.** (Blue box).
- DRAM, Storage, EV VGI, etc.** leads back to **DRP**.

As a threshold observation, EDF does not believe it is proper to so narrowly qualify this process by requiring it be completed on an “expedited basis.” This is a critical logical flaw, as the process of tariffs to source optimal DERs should not be rushed. When given sufficient time to develop, the process to calculate, communicate and adaptively manage tariffs can complement

other approaches, and be a linchpin in the suite of least-cost solutions. With that understanding, EDF views two types of sourcing processes defined by short or long planning time horizons.

For short term needs, centralized competitive procurements are being explored already in the CPUC IDER pilots exploring utility incentives to prioritize DER alternatives.<sup>5</sup> With longer-term planning horizons, however, tariffs can be used to signal the build-out of DERs with capabilities reasonably anticipated to be valuable based on present and forecasted locational net benefits. Over time, as more DERs and other grid changes occur (e.g., as a result of new loads or transmission infrastructure), the value of DER-sourced capabilities and the costs of providing them will also change. Therefore, lead time allows the grid planner/distribution independent system operator to set prices to attract DERs and, as appropriate, change both prices and the types of attributes/services being valued according to grid conditions. Such an adaptive management approach will complement short-term procurement needed to address more pressing needs, but will ultimately be valuable because of the numerous benefits that inure from a DER-optimized future.

As well, it is important to note that a tariffed approach can offer benefits that will not be captured in a utility-controlled approach to procurement of non-wired alternatives. That is, utilities will likely focus on procuring resources that meet certain needs, such as reducing peak load for a certain period of time, while ignoring other significant benefits. On the other hand, a value-based tariff approach that considers the broad set of benefits when costs and benefits,

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<sup>5</sup> *Decision Addressing Competitive Solicitation Framework and Utility Regulatory Incentive Pilot*, Order Instituting Rulemaking to Create a Consistent Regulatory Framework for the Guidance, Planning and Evaluation of Integrated Distributed Energy Resources, R. 14-10-003 at 16-35 (Nov. 10, 2016).

including societal impacts, and that allows third-party DER providers to participate in the market, will better prevent the procurement of suboptimal DERs.

**(B) How would the amount of the tariffed payments be determined to ensure that distributed energy resources alternatives are cost-effective?**

The CPUC has long relied on tariffs and associated elements to increase the use of DERs on the system, while also striving to ensure that the grid remains reliable, increases resiliency, and reduces adverse environmental impacts. Unavoidably, the rate of penetration of DERs in response to incentive programs is spatially diverse. As the Commission has been exploring in Locational Net Benefits Analysis (LBNA) workshops aimed at achieving optimal DER buildout,<sup>6</sup> these incentive policies are also influencing the grid at the distribution feeder level,<sup>7</sup> For example, they have the potential to:

- *Accelerate adoption of environmentally-friendly generating resources, such as elements of the Self-Generation Incentive Program,<sup>8</sup> net energy metering (NEM) in its various iterations,<sup>9</sup> and the formerly available Agricultural Internal Combustion Engine Conversion Incentive Program (AG-ICE).<sup>10</sup>*

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<sup>6</sup> Pacific Gas and Electric Company, San Diego Gas & Electric Company, and Southern California Edison Company, *Locational Net Benefit and Demonstration B Workshop – California IOUs’ Approach* at Slide 3 (Feb. 1, 2016) (optimal locations are those “where specific DERs/DER portfolios provide a net benefit to utility customers, as determined through ICA, DRP LNBM and competitive sourcing”).

<sup>7</sup> See, e.g., Robert Elliott, *The Integration of Distribution Level Generation & Storage into the Grid – Problems and Solutions: Grid Planning and Reliability Policy Paper* at 20 (Aug. 2014).

<sup>8</sup> Center for Sustainable Energy, et al., *Self-Generation Incentive Program Handbook – Provides financial incentives for installing clean, efficient, on-site distributed generation* at 9 (Dec. 18, 2017) (“The purpose of the SGIP is to contribute to Greenhouse Gas (GHG) emission reductions, demand reductions and reduced customer electricity purchases, resulting in the electric system reliability through improved transmission and distribution system utilization; as well as market transformation for distributed energy resource (DER) technologies”).

<sup>9</sup> *Order Instituting Rulemaking to Develop a Successor to Existing Net Energy Metering Tariffs Pursuant to Public Utilities Code Section 2827.1, and to Address Other Issues Related to Net Energy Metering* at 2 (“the net energy metering (NEM) program is an electricity tariff billing mechanism designed to facilitate the installation of customer-side renewable generation”).

<sup>10</sup> *Decision Granting Petition for Modification, Application of Pacific Gas and Electric Company (U39E)* for rate and line extension incentives for conversion of stationary agricultural internal combustion equipment to electric services and related matter, A. 04-11-007 and A. 04-11-008 at 2 (issued Dec. 18, 2015) (the AG-ICE tariff was put in place “in order to address air quality concerns in agricultural areas of

- *Create flexible demand response resources*, through mechanisms such as the Capacity Bidding Program, as well as Real Time, Critical Peak, and Peak Day pricing.
- *Induce deployment of storage*, as accomplished through use of demand charges, and rates such as Schedule A1-STORE, a proposed optional pilot rate that would be available to customers that qualify for Schedule A-1 TOU and that install storage.<sup>11</sup>
- *Address income and energy burden inequities*, such as through California Alternative Rates for Energy (CARE), and the Baseline Allowance.
- *Encourage economic development* through means such as the Economic Development Electricity Rate.

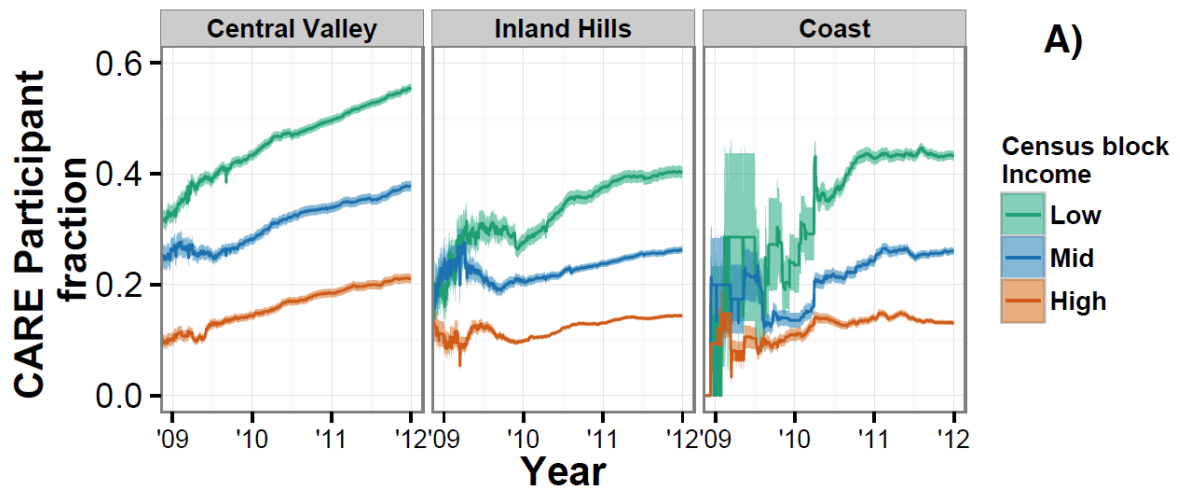
While these tariffs have been offered on a utility- and customer class-specific basis, they have, by virtue of how they are deployed, influenced localized grid conditions. Either because of spatial adoption patterns driven by market conditions (e.g., CARE and NEM programs) or broader demographics, the rates are being exclusively offered to a geographically clustered customer class (e.g., AG-ICE) or are specifically or conceptually defined by boundaries such as a climate zone or an investor-owned utility's (IOU) service territory. For example, the Baseline is defined by climate zones; under the Renewable Energy Self-Generation Bill Credit Transfer Program, local governments can install solar PV and aggregate generation within their boundaries.

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California by creating incentives for agricultural customers to switch from diesel irrigation pumps to electrified pumps”).

<sup>11</sup> *Motion of Pacific Gas and Electric Company for Adoption of the Small Light and Power Rate Design (SLP) Supplemental Settlement Agreement – Attachment 1: Supplemental Settlement Agreement in PG&E's General Rate Case Phase II (Application 16-06-013) on Small Light and Power Design*, Motion of Pacific Gas and Electric Company to Revise Its Electric Marginal Costs, Revenue Allocation, and Rate Design, A. 16-06-013 at 8 (Jan. 29, 2018) (“Schedule A1-STORE is a new optional pilot rate available only to customers that qualify for Schedule A-1TOU and that install storage”).

As an example of the spatial heterogeneity of utility incentive program adoption patterns, CARE enrollment differs by climate region and income level, shown in the figure below.<sup>12</sup>



Tariffs have largely proved effective at achieving their general or specific goals – as evidenced by the fact that enrollment rates for PG&E tariff-based incentive programs rose between 2008 and 2012, as shown in the graph below.<sup>13</sup>

<sup>12</sup> Evan D. Sherwin, Inês L. Azevedo, and Russell M. Meyer, *Characterization of utility programs' enrollment by income and region*, ECEEE Summer Study Proceedings, 1823, 1828 (revised Jun. 19, 2017).

<sup>13</sup> *Id.* at 1827.

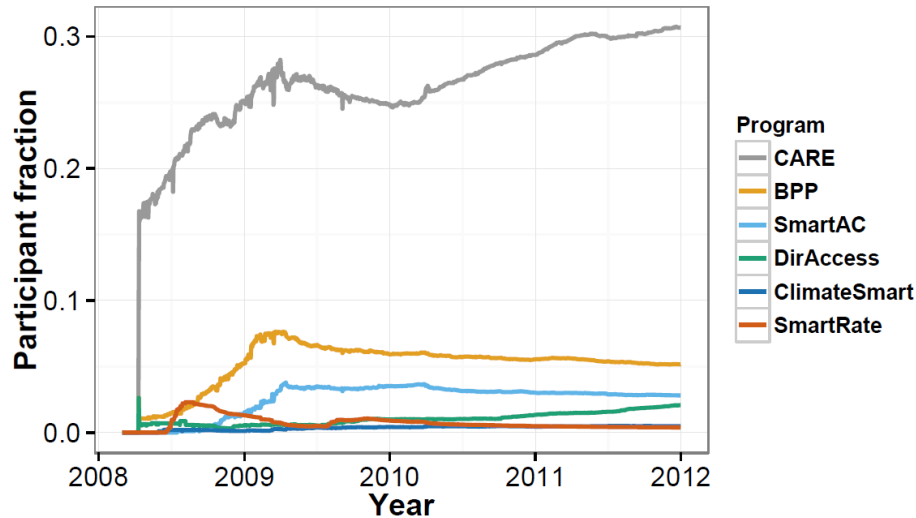


Figure 4. Enrollment rate in PG&E programs as a fraction of households in the dataset over time. The CARE low-income subsidy is by far the most prevalent. We exclude DirAccess, ClimateSmart, and SmartRate from detailed analysis due to low participation rates, and the fact that PG&E no longer allows new enrollment in DirAccess. Note: Figure reproduced from Meyer, Sherwin and Azevedo, working paper.

Likewise, tariffs are increasingly being understood in terms of their impacts on conditions at the circuit level. However, there are many examples where tariffs do not meet the Commission’s strict standards for cost-effectiveness. Although tariffs often deviate from strict adherence to marginal cost-based ratemaking, they do so explicitly, and almost always because they are deemed to be “cost-effective” after all benefits, including benefits that aren’t easy to monetize, are properly accounted for (e.g., energy fuel supply security, energy resiliency, and potentially polluting air emission reductions) and/or because they are determined to be worthwhile even if they do not pass traditional tests for cost-effectiveness (e.g., to address inequities or jump-start new technologies, or because non-monetary benefits are expected to be significant).

Ultimately, if the tariffs are accurate in reflecting marginal costs and benefits, then actions by rate payers to invest in DERs, thereby affecting the marginal costs and/or producing these marginal benefits, then there is no need for additional cost-effectiveness determinations by the

CPUC or IOU. With prices reflecting value – that is, complete information - then consumers can act in their own best interests; market actors decided to act, and the regulator is free from the burden of determining what actions should be taken because they are cost-effective. As well, consumers can use set it and forget it technologies and routine behaviors to manage energy bills with ease. One example of this line of thinking is reflected in the work of Dr. Bruce Nordman at Lawrence Berkeley National Laboratory who observes, based on simulating “price to devices,”

*...a local electricity price is a simple and universal mechanism to reflect the local supply/demand condition. Our analysis showed that such a price can be used to change freezer and refrigerator operation to make better use of local generation, and reduce hardware needed for battery power and losses associated with using battery storage.<sup>14</sup>*

**(C) Would the tariff be available to providers on a first-come, first served basis or should some other selection process be implemented?**

Programmatic rates have generally been offered on a first-come, first-served basis, with enrollment periods time limited upfront (e.g., AG-ICE),<sup>15</sup> by ex poste Commission decision (e.g., NEM),<sup>16</sup> or by constraints sometimes placed on the number of accounts (e.g., A1-STORE)<sup>17</sup>.

While the pricing associated with these rates does not change with enrollment, the principles of

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<sup>14</sup> Bruce Nordman and Mattia Bugossi, *Optimizing Device Operation with a Local Electricity Price*, Lawrence Berkeley National Laboratory at 5 (Mar. 4, 2015).

<sup>15</sup> The AG-ICE program expired on December 31, 2015. Pacific Gas and Electric Company, *AG-ICE Application for Service*, <https://www.pge.com/about/rates/rateinfo/rateoptions/agricultural/ice/index.shtml>.

<sup>16</sup> Pub. Util. Code § 2827(c)(4)(B) sets a limit on NEM enrollment of 5 percent, which appears to be upheld in a 2016 decision. *Decision Adopting Successor to Net Energy Metering Tariff*, Order Instituting Rulemaking to Develop a Successor to Existing Net Energy Metering Tariffs Pursuant to Public Utilities Code Section 2827.1, and to Address Other Issues Related to Net Energy Metering, R. 14-07-002 at 86 (Feb. 5, 2016) (“We therefore choose to continue the basic NEM structure, while aligning the responsibilities of NEM customers more closely with those of other customers in their customer class”).

<sup>17</sup> *Motion of Pacific Gas and Electric Company for Adoption of the Small Light and Power Rate Design (SLP) Supplemental Settlement Agreement – Attachment 1: Supplemental Settlement Agreement in PG&E’s General Rate Case Phase II (Application 16-06-013) on Small Light and Power Design*, Motion of Pacific Gas and Electric Company to Revise Its Electric Marginal Costs, Revenue Allocation, and Rate Design, A. 16-06-013 at 8 (Jan. 29, 2018) (“The pilot program will be offered with a cap on the number of participants of 15,000”).

LNBA would suggest that values will shift, necessitating a change in retail tariffs as well. That is, the first taker might get one price, whereas the second customer might get a different price because they purchased later, after the prices adjust (preferably in an automated way) to reflect new resources on the grid (from the first customers). An example of a successful DER incentive mechanism with automatic adjustment is the California Solar Initiative in which the incentive amount declined as more capacity was installed. Ideally, automation of LNBA calculations can be relied upon to adjust prices quickly, as new information about values is revealed, as customers show their willingness to pay for a DER, and as costs and benefits change.

Tariffs need mechanisms that allow them to correct over time, including caps and time limits to protect against cross-subsidies and other unintended consequences, particularly while the IOUs are learning by doing with DERs sourced via locational tariffs. Tariffs should be offered for time-certain periods, with the value potentially diminishing over time or as they are subscribed. Additionally, megawatt caps should be placed on tariff enrollment as needed to match with grid needs.

To the extent that automatically updating algorithms can be the basis for rate design, then price updates will not be onerous but will remain accurate as grid conditions change. As well, the Commission has used caps successfully in the past, such as the NEM cap to trigger NEM 2.0 and effectively compel a switch to a more accurate underlying TOU price.

EDF encourages the Commission to proceed with its consideration of location-based pricing in the present proceeding, in order to inform how to source DERs that achieve the goal of optimizing the value of DERs to the grid and the DER owners.

To ensure cost-effectiveness, tariff structures can be developed that match with the resulting benefits achieved through their use, much as the periods and price differentials embedded in time-variant rates are supposed to reflect the underlying service costs of consuming electricity at different times. Valuation efforts being conducted as part of the LNBA Cost-Effectiveness Use Case and Methodology<sup>18</sup> and elsewhere will assist with this process, especially given there is sufficient extant information to proceed with deployment of DER-focused tariffs even without completion of those analyses. As evidence of this, the Commission is already relying on useful, but necessarily incomplete, information in ongoing Rate Design Window (RDW)<sup>19</sup> and General Rate Case (GRC)<sup>20</sup> proceedings, such as distribution level marginal cost data, circuit level demand data, planning information, and other inputs.

EDF notes that the IOUs have not yet developed LNBA estimates for the entire distribution system. Also lacking is the representation of all costs and benefits; many potentially significant values, such as energy resiliency and the avoided social costs of carbon pollution, are not reflected completely, if at all, in the LBNA calculations demonstrated thus far in the DRP

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<sup>18</sup> See, e.g., *Assigned Commissioner's Ruling (1) Refining Integration Capacity and Locational Net Benefit Analysis Methodologies and Requirements; and (2) Authorizing Demonstration Projects A and B*, Order Instituting Rulemaking Regarding Policies, Procedures and Rules for Development of Distribution Resources Plans Pursuant to Public Utilities Code Section 769 and Related Matters, R. 14-08-013 et al. at 23-24 (May 02, 2016).

<sup>19</sup> As per the 2015 decision putting default time-of-use (TOU) rates in place, default TOU pilots and evaluation of the rate design window happen concurrently, so the rate design window applications must necessarily evolve as information from the pilots is available. *Decision on Residential Rate Reform for Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company and Transition to Time-of-Use Rates*, Order Instituting Rulemaking on the Commission's Own Motion to Conduct a Comprehensive Examination of Investor Owned Electric Utilities' Residential Rate Structures, the Transition to Time Varying and Dynamic Rates, and Other Statutory Obligations, R. 12-06-013 at 304 (issued Jul. 13, 2015).

<sup>20</sup> As described by the CPUC, the first year of a GRC cycle acts as a test year, during which information is gathered to inform the second and third year. <http://www.cpuc.ca.gov/General.aspx?id=10431>.

pilots.<sup>21</sup> These are significant data gaps to cover before the LNBA information can be used in all parts of the service territory.

EDF supports a menu of tariffs be available to the increasingly diverse capabilities and needs of rate payers and would be prosumers. To that end, EDF recommends that this proceeding explore the development of more automated and transparent tariff-development processes, including frequent engagements with customer groups and third parties as a means to identify potentially innovative approaches and opportunities tied to grid needs. For example, it is prudent to explore “procurement notices,” in which a particular problem and location is identified, and stakeholders are encouraged to submit their tariff structure solutions. Comparatively, current RFP processes do not allow for locational tariffs to be proposed. This approach would mimic what is currently done on a more strictly procurement basis to address local resource adequacy (RA) problems,<sup>22</sup> but with an important difference - this collaboration would produce price signals to which ratepayers and DER innovators could respond, without the opaque nature and inherent barriers that come with centralized competitive solicitations, or constraining inability to alternative the value proposition to be offered to the rate payer (aka, potential DER investor). As necessary, as DERs are sourced, the price signal can and should be updated, either manually or preferably automatically.

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<sup>21</sup> The LNBA analysis should include resiliency and societal benefits, among other metrics, as per the DRP guidance. *Assigned Commissioner’s Ruling on Guidance for Public Utilities Code Section 769 – Distribution Resource Planning, Attachment: Guidance for Section 769 – Distribution Resource Planning*, Order Instituting Rulemaking Regarding Policies, Procedures and Rules for Development of Distribution Resources Plans Pursuant to Public Utilities Code Section 769, R. 14-08-013 at 4 (Feb. 6, 2015).

<sup>22</sup> In this respect, tariffs should be robustly added to the list of possible ways to address RA needs.

While longer time lines are better, simplifying onerous rulemakings can facilitate regulatory responses. EDF supports this proceeding exploring how tariffs could be authorized through a streamlined advice letter process that allows for stakeholder feedback to be solicited and incorporated. As EDF envisions it, rather than have these tariffs debated in a series of workshops, it would be helpful to test these tariffs out in an iterative, dynamic process embedded within relevant ratemaking proceedings.

In accordance with current policy, tariffs should generally be offered on a first-come, first-served, basis. However, such an approach should be associated with robust marketing, education, and outreach strategies, that provide ample notice to ratepayers and third-parties of the tariff opportunity and associated rules. In addition, consideration should be given to which customer class or geographic area might be able to deliver tariff-related value most expeditiously and synergistically, with tariffs potentially offered to that class or area first. For example, the commercial class might be best situated to add dispersed small-scale storage, while the agricultural class could be tapped for geographically-concentrated, flexible, dispatch of irrigation pumping loads.

At this stage in the rulemaking, the Commission should be open to considering innovative tariff processes. For example, similar to demand response tariffs, this proceeding could explore “community tariffs” across all sectors that are anchored geographically to invite community solutions. In this concept, multiple entities would be encouraged to aggregate as a whole and subscribe to the rate. This approach should be contemplated, particularly as a means to offer targeted benefits in locations and to customers that have traditionally been difficult to reach, such

as those living in multi-unit dwellings, or that face significant barriers to being readily able to take advantage of first-come-first-serve incentives.

Over time, the Commission should consider shifting to a “bottom-up” approach to tariff development and deployment. That is, tailored tariffs could be offered based on conditions at individual circuits, aggregated to a distribution planning area, climate zone, and utility service area. The diversity embedded in offering a host of localized tariffs, built-up to ultimately match with system-wide needs, could serve as an effective cost, risk, and resiliency management approach. We discuss the economic and process advantages of localized tariffs in our response to Q1(A).

With increasingly precise prices, the ability to harvest the locational attributes of customer-owned DER “goods and services” is enhanced. While not all customers will have DERs, those that do so will benefit themselves and the broader grid when they are responding to accurate price signals.

4. ***Are there other mechanisms the Commission should consider in order to deploy cost-effective distributed energy resources that satisfy distribution planning requirements as required by Public Utilities Code § 769(b)(2)? Describe these other mechanisms in detail, including proposed necessary steps?***

The Commission should consider other mechanisms to spur DER deployment where benefits to the distribution grid or the DER owners are potentially significant, including:

- Bid processes and incentives developed specifically to engage communities that may find it difficult to otherwise access DERs, to incent managed electric vehicle (EV) charging, and to encourage new land use developments to incorporate DER solutions into their planning processes, as a kind of extension to green building certification. For example, “community tariffs,” as described in EDF’s response to Question 1, could encourage a mix of ratepayer participation and DER deployment to address distribution needs. Likewise, EVs could be stationed at specific underserved locations, with charging managed in the interest of grid requirements, similar to

automatic air conditioning programs. In another EV example, prices at individual EV charging stations can be adjusted where demand and charging capacity are misaligned, either because there is too much demand (solution: raise prices) or too little utilization of a given charging station (solution: lower prices).

- There should be ongoing investigations, with associated tariff development and direct procurement, to identify underutilized assets and leverage them to cost-effectively serve the grid. For example, voltage support associated with photovoltaic installations; replacement of natural gas backup engines with environmentally-friendly resources, which could then be grid-tied; and EV charging “hubs” transformed into largescale batteries.
- Giving opportunities to pay forward CARE subsidies with a “cash for DR and EE” program. That is, rather than receiving a rate discount customers can choose to draw those subsidies in advance to pay for efficiency and load shifting capabilities. This idea might be merged with the current proposal for enhancing demand response (DR) and energy efficiency (EE) assets currently being considered by the CPUC.<sup>23</sup>
- These mechanisms can also be facilitated with financing solutions, such as on-bill repayment.
- The Commission should explore the appropriate role for community choice aggregators (CCAs). They may have additional opportunity to engage their customers in location-based tariffs but currently rely on IOU rate designs. Decisions in this proceeding will influence opportunities for CCAs to compete to provide customers with DER solutions.

8. ***Explain whether the Commission should focus on the development of one mechanism or an assortment of optional mechanisms for providers.***

In previous comments in the DRP proceeding, EDF wrote:

*A number of pricing mechanisms should be considered in this proceeding to convey the value of DER deployment as part of the DRPs. These could include location-specific adders to existing tariffs and programs, request for offers, direct compensation, tailored time variant rates, new tariffs that incentivize non-exporting distributed generation (“DG”) systems and DG systems that export on-peak, so as to better align load and generation, as well as to encourage load shifting, energy efficiency, and demand response in lieu of expensive infrastructure. In addition, the Commission should consider unbundling ancillary services to provide price signals for alternative supply resources and putting into place innovative tariffs for fleets of DERs that can be dispatched day-ahead and/or in real time to provide ramping, frequency support, voltage support, and other ancillary services. The Office of Ratepayer Advocates’ (“ORA”) suggestion to*

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<sup>23</sup> California Public Utilities Commission, *Energy Division Straw Proposal on Limited Integration of Demand Response and Energy Efficiency Activities under Energy Efficiency Applications (A. 17-01-013 et al.) and Demand Response Applications (A. 17-01-012 et al.)* (June 2012).

*consider one-time incentive payments to encourage DER development in regions or substations where particularly substantial benefits can be harvested also has merit.*<sup>24</sup>

We still stand by that position. Well-structured, dynamic, value-based, and locational and time-determined tariffs that can shape the market should be considered preferred mechanisms, as they allow both ratepayers and providers to beneficially participate in offering grid solutions and to provide for nimble flexibility.<sup>25</sup> This approach should be supported, as needed, with transparent and streamlined competitive solicitations, combined with active efforts to leverage available assets. Other collaborative processes, including the annual eLab Summit, have produced similar recommendations to increase the precision of tariffs as a means to reward DERs fairly. For example, Rocky Mountain Institute has recommended,

*...a pathway for deliberately and incrementally increasing rate sophistication along three continuums for residential and small commercial (i.e., mass-market) customers:*

- 1. Attribute unbundling—shifting from fully bundled pricing to rate structures that break apart energy, capacity, ancillary services, and other components*
- 2. Temporal granularity—shifting from flat or block rates to pricing structures that differentiate the time-based value of electricity generation and consumption (e.g., peak vs. off-peak, hourly pricing)*
- 3. Locational granularity—shifting from pricing that treats all customers equally regardless of their location on the distribution system to pricing that provides geographically differentiated incentives for DERs.*<sup>26</sup>

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<sup>24</sup> *Reply of Environmental Defense Fund to Initial Responses to Questions Posed in the August 14, 2014 Order Instituting Rulemaking, Order Instituting Rulemaking Regarding Policies, Procedures and Rules for Development of Distribution Resources Plans Pursuant to Public Utilities Code Section 769, R. 14-08-013 at 7 (Oct. 6, 2014) (citations removed).*

<sup>25</sup> Rocky Mountain Institute Electricity Innovation Lab, *Rate Design for the Distribution Edge – Electricity Pricing for a Distributed Resource Future* (Aug 2014) at 2, [https://rmi.org/wp-content/uploads/2017/05/RMI\\_Document\\_Repository\\_Public-Reppts\\_2014-26\\_eLab-RateDesignfortheDistributionEdge-ExecSum-highres.pdf](https://rmi.org/wp-content/uploads/2017/05/RMI_Document_Repository_Public-Reppts_2014-26_eLab-RateDesignfortheDistributionEdge-ExecSum-highres.pdf) (“More granular pricing, capable of reflecting marginal costs and benefits more accurately than today’s rates do, will provide better incentives to direct distributed resource investments, regardless of whether investments in and management of DERs are undertaken by customers, by utilities, or by third-party service providers”).

<sup>26</sup> *Id.* at 7.

9. ***What existing Commission-approved programs, incentives, and tariffs would benefit from a coordination plan, as required by Public Utilities Code § 769(b)(3), and result in maximum locational benefits and minimal incremental costs? Similarly, should the Commission consider coordination with the Interconnection Rulemaking (R. 17-07-007) to ensure operational requirements of Smart Inverters are aligned with any relevant valuation mechanism?***

All existing tariffs should be reviewed to examine how they are influencing localized grid demand and conditions, and to determine whether they might be modified to better cater to distribution-specific needs. Similarly, a diversity of time-variant rates, with different periods and price differentials, could be offered in specific places to harvest value. EE and DR programs could be similarly geographically targeted to secure demand reductions where they are most needed.

EDF also recommends the Commission approve pilots proposed in a recent DR workshop, specifically identifying incentives based on LNBA findings to pair with the straw proposal developed for that workshop.<sup>27</sup> The IOUs each have several pilot projects underway that seek to source alternatives to traditional wires, poles and central station generation, such as PG&E's Oakland Clean Energy Initiative,<sup>28</sup> SCE's Preferred Resources Pilot,<sup>29</sup> and SDG&E's many local

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<sup>27</sup> California Public Utilities Commission, *Assigned Commissioner's Office Draft Straw Proposal for Pilots Targeting Demand Response to Benefit Disadvantaged Communities*, A. 17-01-012, et al. (Feb. 7, 2018).

<sup>28</sup> Pacific Gas and Electric Company, *PG&E Proposes Innovative Clean Energy Alternative to Aging Fossil Fuel Plant in Oakland* (Dec. 06, 2017), [https://www.pge.com/en/about/newsroom/newsdetails/index.page?title=20171206\\_pge\\_proposes\\_innovative\\_clean\\_energy\\_alternative\\_to\\_aging\\_fossil\\_fuel\\_plant\\_in\\_oakland](https://www.pge.com/en/about/newsroom/newsdetails/index.page?title=20171206_pge_proposes_innovative_clean_energy_alternative_to_aging_fossil_fuel_plant_in_oakland).

<sup>29</sup> Southern California Edison, *Our Preferred Resources Pilot – Meeting Local Demand Through Clean Energy Resources*, <https://www.sce.com/wps/portal/home/about-us/reliability/meeting-demand/our-preferred-resources-pilot/>.

government and community partnerships.<sup>30</sup> As well, EV pilots are underway designed to grow infrastructure while managing load from an increasing number of zero-emission vehicles being driven in California. All of these efforts could potentially benefit from longer-term planning around sourcing DERs using tariffs and other incentives that avoid the additional steps and transactional costs of utility-run solicitations.

10. ***Other than maximizing locational benefits and minimizing incremental costs pursuant to § 769(b)(3), are there any other objectives the Commission should consider when developing the required coordination plan?***

EDF recommends that the Commission consider other objectives as part of coordination efforts, including:

- *Harvesting environmental benefits and addressing environmental inequities.* Consideration should be given to encouraging DER deployment in ways that reduce polluting air emissions. For example, active use of EVs as a grid device should be prioritized, coupled with incentives and other means of making EVs more attractive relative to polluting vehicles, with a particular focus on areas where adoption is lacking and air quality concerns are severe. Additionally, the Commission could consider localized time-variant rates that are tied to reducing ramping needs associated with specific natural gas generating facilities.
- *Reducing bills for economically vulnerable individuals,* by enabling them to participate in and benefit from tariff-supported DER adoption through means such as focused marketing, education, and outreach, and potentially expanded opportunities for participation.
- *Increasing resiliency and reliability through DER diversity.* By ensuring a variety of resources, rather than putting all one's eggs in the proverbial basket, the Commission and utilities will be better able to ensure a nimble grid that can respond to local conditions, rather than an inflexible system that may lead to more frequent, longer, power outages.
- *Reducing fire risks.* This can occur by, for example, retiring overhead wires in favor of deploying DER solutions.

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<sup>30</sup> San Diego Gas & Electric Company, *Energy Efficiency Partnerships*, <https://www.sdge.com/more-information/community/energy-efficiency-partnerships/local-government-partnerships>.

- *Community economic development.* In addition to lowering utility costs, opportunities for an equity stake in the grid via DERs contributes to the economic stability and vitality of the community.
- *Minimized transactional costs.* Current utility-driven DER programs are slow and administratively onerous. Procurement regimes that allow customers to harvest DER values in response to incentives can reduce at least two transactions: creating and undertaking RFP processes for non-wires alternatives. With well-structured incentives, DER investments will be internally rewarding, simplifying the entire system and alleviating burdens on our regulators.

### III. CONCLUSION

EDF thanks the Commission for the opportunity to respond to this amended scoping memo.

The use of pricing based on a fair valuation of DERs to advance environmental and social goals is a long overdue and important step for the Commission. With the recommendations offered by EDF, we believe that DER market will be better equipped to demonstrate deep benefits.

Respectfully signed and submitted on March 29, 2018.

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