

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

In the Matter of the Application of San Diego Gas & Electric Company (U902E) for Approval of its Proposals for Dynamic Pricing and Recovery of Incremental Expenditures Required for Implementation.

Application 10-07-009
(Filed July 6, 2010)

Application of San Diego Gas & Electric Company (U902E) for Authority to Update Marginal costs, Cost Allocation, and Electric Rate Design.

Application 19-03-002
(Filed March 4, 2019)

JOINT OPENING BRIEF OF CALIFORNIA SOLAR & STORAGE ASSOCIATION, OHMCONNECT, INC., AND CALIFORNIA ENERGY STORAGE ALLIANCE (“JOINT ADVANCED RATE PARTIES”) AND ENEL X NORTH AMERICA, INC.

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SUMMARY OF RECOMMENDATIONS

Rule 13.11 of the Commission’s Rules of Practice and Procedure requires a “summary of the briefing party’s recommendations following the table of authorities.” In summary, as supported by this Joint Opening Brief, the California Solar & Storage Association (CalSSA), OhmConnect, Inc., and California Energy Storage Alliance (collectively, the Joint Advanced Rate Parties (JARP)) and Enel X North America, Inc. (Enel X) recommend and request that the Commission’s final decision in Application (A.) 10-07-009 – A.19-03-002, Phase 2 of the General Rate Case (GRC) of San Diego Gas and Electric Company (SDG&E), find and order as follows:

Recommended Findings:

1. Real-time pricing incentivizes participating customers to reduce loads during the hours of the year with the greatest demands on the electric grid.
2. Real-time pricing provides grid benefits and reduces utility costs by reducing participants’ contributions to peak loads, and therefore reduces the need for Resource Adequacy capacity.
3. Real-time pricing advances the need for greater load-flexibility identified in the Preliminary Root Cause Analysis.
4. Real-time pricing incentivizes the reduction of greenhouse gas (GHG) emissions by encouraging participants to reduce consumption when the least-efficient gas-fired plants are the marginal resource and to increase consumption when renewable energy and the most-efficient gas-fired resources are the marginal resource.
5. Real-time pricing facilitates the integration of renewable energy by encouraging flexible loads to respond to changes in renewable energy output rather than relying on additional supply-side resources to balance supply and demand.
6. Real-time pricing can help customers save money on electric bills.
7. Real-time pricing has been used successfully for many years in other jurisdictions such as Illinois and Georgia.

Recommended Orders

1. The Commission should order SDG&E to confer, within 90 days of the adoption of final decision in this proceeding, with interested parties on the rate design; marketing, education, and outreach; and evaluation and measurement details of an optional RTP to be offered to all residential, general service, and agricultural customers.

2. The Commission should order SDG&E to submit a Tier 3 advice letter with the final RTP proposal for residential and general service customers within 120 days of the adoption of a final decision in this proceeding.

3. The optional RTP tariffs proposed by SDG&E should be available to residential and general service customers without limitation on the number of customers enrolled.

4. The optional RTP tariffs proposed by SDG&E should include the following elements: a) day-of CAISO price signals, which may be based on either the fifteen-minute market or the five-minute real-time market, b) at least two different summer rate schedule generation cost capacity adders, which may be called on a day-ahead or morning-of basis and which may or not have prices that differ by hour (as for example, Southern California Edison Company's RTP tariffs or the electric vehicle RTP rate proposed by Pacific Gas and Electric Company in A.20-10-011); and c) billing at fifteen-minute intervals.

5. The Tier 3 advice letter shall propose a schedule to implement the optional RTP tariffs in 2022.

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The California Solar & Storage Association, OhmConnect, Inc., and California Energy Storage Alliance (collectively, the Joint Advanced Rate Parties) and Enel X North America, Inc. respectfully submit this Joint Opening Brief in Application (A.) 10-07-009 – A.19-03-002, Phase 2 of the General Rate Case (GRC) of San Diego Gas and Electric Company (SDG&E). This Joint Opening Brief is timely filed and served pursuant to the Commission’s Rules of Practice and Procedure (Rule 13.11), the Administrative Law Judge’s (ALJ’s) Email Ruling Setting Evidentiary Hearing and Updating Procedural Schedule issued on October 19, 2020.

**I.
INTRODUCTION**

The express purpose of this Joint Opening Brief is to address one of the three litigated issues that were not the subject of a Settlement Agreement filed by the Settling Parties on October 8, 2020. The litigated issue addressed herein is whether the Commission should adopt “real-time pricing or other dynamic rate options” for SDG&E in this proceeding.¹

¹ A10-07-009-A19-03-002 (SDG&E GRC Phase 2) Scoping Memo and Ruling of Assigned Commissioner (July 11, 2019) (“Scoping Memo”), at p. 2.

California Solar & Storage Association (CalSSA), OhmConnect, Inc. (OhmConnect), and California Energy Storage Alliance (CESA) (participating collectively here as the Joint Advanced Rate Parties (JARP)), and Enel X North America, Inc. (Enel X) comprise companies that have extensive knowledge and long experience in providing solar, storage, demand response, and distributed energy resources to Commission-jurisdictional electric utilities, including SDG&E, and their customers. This experience also includes participation before the Commission on electric utility retail rate design and its impact on carbon-free resources that are critical to meeting this State's Climate Change goals.

In this proceeding, both JARP and Enel X have brought their extensive expertise through active participation in the Workshops held in this proceeding on both real time pricing (RTP) and demand charges as well as prepared testimony, supplemental testimony, and rebuttal testimony proposing and supporting an RTP tariff structure that can and should be adopted in this proceeding.² As supported by applicable law and policy and the record in this proceeding, detailed herein, the Commission's decision in this proceeding should make the findings and orders included in the Summary of Recommendations at pages iii through iv of this Joint Opening Brief, including the following:

- The Commission should find that the JARP-Enel X proposed RTP tariff structure is the only such proposal made in this proceeding in response to Commission direction and policy.
- The Commission should find that the JARP-Enel X proposed RTP tariff structure has the following benefits: peak load reduction and corresponding avoided utility costs, bill

² Exhibit (Ex.) JARP-01 (April 6, 2020) (JARP (Murtishaw-Belenky)); Ex. JARP-02 (August 31, 2020) (JARP-Enel X (Murtishaw-Ryan)); and Ex. JARP-04 (November 5, 2020) (JARP-Enel X (Belenky)). JARP-Enel X also offered Ex. JARP-03 (SDG&E Data Responses to JARP-Enel X Data Requests No. 1 and No. 1.c., which was admitted into the record on October 26, 2020 (Reporter's Transcript (RT) at 42 (ALJ McKinney)).

savings opportunities for customers, reducing greenhouse gases, and supporting emerging customer-sited technologies that unlock demand flexibility as a grid resource.

- A delay to 2022 in beginning a process to implement an RTP tariff structure is not reasonable and does not meet the Commission’s current policy goals, including those reached jointly with the California Independent System Operator (CAISO) and the California Energy Commission (CEC) as a means to address and prevent further electric energy blackouts as occurred in August 2020.
- The Commission should find that concerns about the JARP-Enel X proposed RTP tariff related to cost-shifting and meter reprogramming costs are not sufficient to delay the start of a process to implement the proposed RTP tariff structure and that such issues can be addressed through additional workshops to be conducted within 90 days of Commission’s adoption of a decision in this proceeding.
- The Commission should order that, following the conclusion of workshops and responsive comments, SDG&E should submit a proposed RTP tariff by Tier 3 Advice Letter no later than 120 days after adoption of a decision in this proceeding

II.

PROCEDURAL AND LEGAL FRAMEWORK GOVERNING THE DYNAMIC RATES/REAL TIME PRICING ISSUE IN THIS PROCEEDING.

A. Commission Decisions and Policy

On March 14, 2019, the Commission issued Decision (D.) 19-03-002 denying a joint petition filed by multiple parties, including CalSSA, CESA, OhmConnect, and Enel X, to open a rulemaking to consider real time pricing for electricity and demand charge reforms. Denial of the petition was based on the grounds that these issues have been and should continue to be addressed in “proceedings that ... consider the utility-specific costs that would drive those designs” and to open a rulemaking in those circumstances would be “duplicative and inefficient.”³ More specifically, the Commission found that the “general issue of the reasonableness of the rate designs for each IOU [Investor Owned Utility] was within the scope

³ D.19-03-002, at p. 12.

of each utility’s previous GRC Phase 2 proceeding [that] includes the RTP-specific issues described in the petition.”⁴

In D.19-03-002, the Commission pointed to D.18-11-027 as an example of a GRC Phase 2 application (in this case, by Southern California Edison Company (SCE)) in which RTP tariffs had been “explicitly” considered, modifications approved, and further consideration of those tariffs scheduled for SCE’s next GRC Phase 2 proceeding.⁵ In further support of continuing in this procedural vein, the Commission found that “[a]ll of the utilities are preparing revised demand charge rate designs, RTP designs, or both in preparation for their next GRC Phase 2 applications”⁶ and that it was incumbent upon parties to use the “opportunity” to address RTP rate design where that issue is part of the scope of a GRC 2 Phase 2 proceeding.⁷

D.19-03-002 further used this proceeding (A.19-03-002) as an example of “expediency” in addressing RTP tariffs, as opposed to a rulemaking, by stating that RTP tariffs “could be litigated in [SDG&E’s A.19-03-002] and a decision on those tariffs could be issued *by the end of 2020*.”⁸ In contrast, the Commission found that the time and process required for a rulemaking to yield such tariffs “would result in final demand charge or RTP tariff adoption for SDG&E customers by 2021, at the earliest, or more likely 2022 assuming that the rate design proceeding lasts as long as 18 months.”⁹

In conclusion, D.19-03-002 states:

“The Commission wishes to clearly indicate to Joint Petitioners, and the respondents supporting the petition, that their focus on demand charge reform and RTP development is welcome. Joint Petitioners and their supporters should endeavor to participate in the prehearing conferences in the GRC Phase 2

⁴ D.19-03-002, at p. 11.

⁵ *Id.*

⁶ *Id.*

⁷ *Id.*, at p. 7.

⁸ *Id.*, at p. 8; emphasis added.

⁹ *Id.*, at pp. 8-9.

proceedings scheduled in 2019 for SDG&E and PG&E so that the rate design issues raised in their petition may be considered explicitly for the scope of each of those proceedings.”¹⁰

In terms of “welcoming” RTP tariff proposals, it is the case that the Commission has previously recognized the benefits of such tariffs. Thus, in approving SCE-proposed RTP tariffs in D.18-07-006, the Commission agreed with SCE’s analysis that such tariffs “provide customers with more accurate and granular energy price information, allowing customers to tailor energy usage and save on energy bills by more precisely avoiding high-cost period usage and conversely, increasing usage during low-cost periods.”¹¹

In addition, in D.19-10-055, the Commission found that the record in Pacific Gas and Electric Company’s (PG&E’s) application for approval of Commercial Electric Vehicle (CEV) Rates demonstrated that there were CEV customers interested in such a rate, that “rate choices for CEV customers are inherently desirable,” “that it is important that CEV customers be given a variety of rates to choose from that help lower their costs,” and that the “position that a dynamic CEV rate may create environmental benefits is uncontested.”¹² With these findings, the Commission ordered PG&E to file an application for a dynamic rate option for CEV customers and to do so in a manner that would permit its expeditious consideration by the Commission.¹³ In compliance with these orders, on October 23, 2020, PG&E filed A.20-10-011 seeking approval of a CEV day-ahead hourly real time pricing pilot and pilot rate specifically aimed at evaluating “customer understanding and supporting technology for a dynamic rate that can change every, from hour-to-hour, ...”¹⁴

¹⁰ D.19-03-002, at p. 9.

¹¹ D.18-07-006, at pp. 68, 70.

¹² D.19-10-055, at pp. 28-30.

¹³ *Id.*, at p. 30.

¹⁴ A.20-10-011, at p. 1.

Finally, on October 6, 2020, the Commission published on its website a Joint Press Release of the Commission, California Independent System Operator (CAISO) and California Energy Commission (CEC) announcing the issuance of their joint Preliminary Root Cause Analysis of the August 2020 heat wave and rotating outages, which also provided a link to that analysis.¹⁵ Among other things, the Preliminary Root Cause Analysis includes “recommendations and immediate steps” to be taken by 2021 (“near term”) to include the CPUC expediting “regulatory and procurement processes to develop additional resources that can be online by 2021, including coordination with non-CPUC jurisdictional entities,” which “will most likely focus on ‘demand side’ resources such as demand response,” and to mitigate shortfalls by enhancing load flexibility and conservation.¹⁶

More recently, in response to this analysis and the need for “near term” solutions, the Commission has included in its Business Meeting Agenda for November 19, 2020, a proposed Rulemaking “to identify and execute all actions within its statutory authority to ensure reliable electric service in the event that an extreme heat storm occurs in the summer of 2021.”¹⁷ While this Rulemaking identifies prospective options to increase “capacity in the energy grid...by the Summer of 2021,” it certainly does not foreclose Commission adoption of currently pending proposals, such as RTP tariffs or dynamic pricing, in active Commission proceedings, including this one, that will certainly enhance “load flexibility and conservation” in the near term.

¹⁵ CPUC-CAISO-CEC Joint Press Release (October 6, 2020): <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M348/K229/348229612.PDF> . Preliminary Root Cause Analysis of Mid-August 2020 Heat Storm (October 6, 2020): <http://www.caiso.com/Documents/Preliminary-Root-Cause-Analysis-Rotating-Outages-August-2020.pdf>. Pursuant to Rule 13.9 of the Commission’s Rules of Practice and Procedure, these documents can be officially noticed in this proceeding as “Official acts” of the Commission pursuant to its state constitutional and legislative authority. (California Evidence Code §452(c)).

¹⁶ Preliminary Root Cause Analysis, *supra*, at pp. 65, 67.

¹⁷ Proposed Rulemaking, at p. 2

(<https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M349/K862/349862998.PDF>).

B. Prehearing Conference and Scoping Memo

On June 12, 2019, the Commission held the first Prehearing Conference (PHC) in A.19-03-002 (SDG&E GRC Phase 2). At that PHC, assigned Administrative Law Judge (ALJ) Kao announced that the Commission was “interested in considering realtime pricing and other dynamic pricing rate options for SDG&E customers,”¹⁸ but noted that, in its PHC Statement, SDG&E had indicated that it was “amenable to serving supplemental testimony on streetlighting, not on realtime pricing or potential demand charge reforms.”¹⁹ To that end, ALJ Kao announced that “[o]n realtime pricing or, more broadly, dynamic pricing, we may nevertheless direct SDG&E to propose realtime pricing and dynamic pricing options and/or to respond to specific rate design proposals or ideas...”²⁰ ALJ Kao further encouraged “intervenor[s] to make concrete, specific proposals for any new realtime pricing or dynamic pricing options;...”²¹ ALJ Kao also agreed that a workshop or workshops on such options would be beneficial.²²

On July 11, 2019, the Scoping Memo and Assigned Commissioner’s Ruling (“Scoping Memo”) was issued for this proceeding. Among the issues identified as being “within the scope” of the proceeding was:

“3. Rate design, including, but not limited to the following:

.....

c. All customer classes: real-time pricing or other dynamic pricing rate options.”²³

¹⁸ RT at 15 (ALJ Kao).

¹⁹ RT at 16 (ALJ Kao).

²⁰ *Id.*

²¹ *Id.*

²² RT at 21 (ALJ Kao).

²³ Scoping Memo, at p. 2.

C. ALJ Rulings and Evidentiary Hearing

On October 2, 2019, ALJ Kao issued an Email Ruling providing direction for a Workshop on dynamic and real-time pricing to be held on October 15, 2019. That Ruling defined the purpose of the Workshop as three-fold. Namely, the Workshop was to include a discussion of existing rates or pilots, an opportunity for parties to share preliminary proposals, and exploration of implementation issues related to dynamic rates feasibility and design.

The Ruling also advised: “It is the Commission’s intent that interested parties use the information shared in the workshop to propose specific and well-developed proposals for **optional** dynamic rates in SDG&E’s service territory in their testimony.”²⁴ The panel discussion of implementation issues related to dynamic rates was to address a list of topics also identified by the Ruling, and SDG&E was directed to formally file a report summarizing the presentations and discussions at that Workshop, which it did on October 29, 2019 (“Dynamic Rate and Real Time Pricing Workshop Report”). That Report concludes with remarks by assigned Commissioner Shiroma that testimony on “real-time pricing or dynamic rate proposals needs to be as thorough as possible and provide ample supporting research and regulatory citations.”²⁵

On April 30, 2020, ALJ McKinney issued an Email Ruling in response to rate case plan changes ordered in D.20-01-002. By that Ruling, ALJ McKinney advised that SDG&E’s next GRC 2 would be “filed on **August 15, 2022** with rate design changes to take effect in **2024**.”²⁶

From the submission of opening and rebuttal testimony from January through May 2020, the only parties that offered a dynamic rate proposal were the JARP (CALSSA, OhmConnect, and CESA) in their prepared testimony (Exhibit JARP-01) served on April 6, 2020. In an

²⁴ ALJ’s Email Ruling (October 2, 2019), at pp. 8-9; emphasis original.

²⁵ A10-07-009 – A19-03-002 (SDG&E GRC Phase 2) SDG&E Response with Dynamic Pricing and Real Time Pricing Workshop Report (October 29, 2019), Attachment A, at p. 1.

²⁶ ALJ’s Email Ruling (April 30, 2020), at p. 3; emphasis original.

Email Ruling issued on July 17, 2020, ALJ McKinney confirmed that the record on real-time pricing or dynamic rate proposals to that dated consisted of the formally filed Dynamic Rate and Real Time Pricing Workshop Report and the JARP proposed RTP rate.

In addressing this situation, ALJ McKinney first offered background on the Commission’s “support” for dynamic rates, including RTP rates, and reiterated the finding of D.19-03-002 that such proposals should be made and evaluated in the individual utility’s GRC.²⁷ The Ruling continued by identifying rate design principles followed by the Commission in adopting a rate for residential customer classes.²⁸

Noting that the Commission may take into account the workshop report and comments, ALJ McKinney nevertheless concluded that there remained the need for “evidentiary support” to adopt a rate. On that point, in her Ruling, ALJ McKinney confirmed that, as of July 2020, again, evidence on an RTP rate consisted only of the JARP RTP rate proposal. While summarizing that proposal, the ALJ concluded that “other information” was still necessary to evaluate and adopt that new rate design.²⁹ To that end, the ALJ provided an opportunity for “supplemental testimony to address that gap” and identified certain information that “could” be included to that end with the submission of Supplemental Testimony and Supplemental Rebuttal Testimony to be served on July 31 and August 7, 2020, respectively. As described in detail below, on August 31, 2020, JARP and Enel X served such Supplemental Testimony on their jointly proposed RTP tariff structure responsive to the ALJ’s directions.

On October 30, 2020, the Commission held an evidentiary hearing on the issue of the dynamic rates-RTP in this Application. JARP-Enel X witnesses Scott Murtishaw, Maria Belenky, and Ryan Mann testified as a panel in responding to questions posed by ALJs

²⁷ ALJ’s Email Ruling (July 17, 2020), at pp. 3-4.

²⁸ *Id.*, at p. 4.

²⁹ *Id.*, at p. 5.

McKinney and Lee regarding their testimony and dynamic rate proposal in Exhibits JARP-01 (JARP Prepared Testimony (April 6, 2020), JARP-02 (JARP-Enel X Supplemental Prepared Testimony (August 31, 2020), and JARP-03 (SDG&E Responses to JARP-Enel X Joint Data Requests 01 and 01.a). These exhibits were all admitted into the record of this proceeding on September 28 and October 26, 2020.

In addition, on November 5, 2020, as permitted by ALJ McKinney, JARP-Enel X served rebuttal testimony (Exhibit JARP-04) to The Utility Reform Network's (TURN's) Supplemental Testimony (Exhibit TURN-04) on automation devices. On November 12, 2020, JARP-Enel X filed a motion for admission of Exhibit JARP-04 into the record of this proceeding.

III.

THE JARP-ENEL X JOINTLY PROPOSED RTP TARIFF STRUCTURE ADVANCES AND MEETS COMMISSION POLICY AND DIRECTION, IS SUPPORTED BY THE RECORD, IS JUST AND REASONABLE, AND SHOULD BE ADOPTED IN THIS PROCEEDING.

A. Despite Clear Direction from the Commission, Only JARP-Enel X Offered and Supported a Dynamic Rates/Real Time Pricing Proposal for Adoption in This Proceeding.

The Commission's decisions and actions recited above make clear that this SDG&E GRC 2 *is* the appropriate venue for the Commission to consider and adopt dynamic pricing/real-time rates for all SDG&E customers to be made available on an opt-in or voluntary basis. Further, the Commission has "supported" and "welcomed" such proposals that are aimed at providing customers with the ability to better tailor their energy consumption in a manner that will not only benefit them, but also the grid as a whole. The joint agencies' Preliminary Root Cause Analysis for the August 2020 blackouts further underscores the importance of taking such actions now for implementation by 2021. If no action is taken by the Commission to adopt an RTP tariff or begin the implementation process for such a tariff in its decision on this proceeding, the April 30

ALJ's Ruling makes clear that the next opportunity to do so will need to await SDG&E's GRC 2 to be filed in August 2022 for rate design changes that will not take effect until 2024.³⁰

Action by the year 2024 is clearly too late. The Commission must strive to enable all mechanisms that promote load flexibility as soon as possible. It is also well off the mark of meeting the Commission's expectation stated in D.19-03-002 that RTP tariffs "could be litigated in [SDG&E's A.19-03-002] and a decision on those tariffs could be issued *by the end of 2020*" or even 2022, the projected end date for the rulemaking that the Commission declined to issue in D.19-03-002.³¹

The only question then is whether the record in this SDG&E GRC 2 provides evidentiary support for adoption of an RTP rate now. JARP-Enel X submit that their testimony – both written (Exhibits JARP-01, JARP-02, JARP-03, and JARP-04) and oral (October 30 evidentiary hearing) – provide and support an RTP rate proposal that is consistent with the Commission's rate design principles, is just and reasonable, and should be adopted in this proceeding. The JARP-Enel X RTP rate proposal is also consistent with the Commission's recognition of the propriety of considering RTP rates in this proceeding that dates back and has continued over the last *20 months* and is not diminished by the fact that neither SDG&E nor any other party, except JARP-Enel X, has proposed and supported an RTP tariff for adoption in this proceeding.

Further, concerns raised by SDG&E and other parties regarding that proposal largely are a matter of misinterpretation that are explained or clarified below. What is not disputed is that an RTP tariff structure has significant benefits both to customers and now the State that put a premium on moving forward now with that structure. As explained below, that implementation process may require additional workshops and party input to complete all details, but delaying

³⁰ ALJ's Email Ruling (April 30, 2020), at p. 3; emphasis original.

³¹ D.19-03-002, at p. 8; emphasis added.

that process will certainly defeat the intent of this Commission to provide customers with the tools necessary increase flexibility in energy usage as soon as possible.

B. JARP-Enel X Have Proposed and Supported an RTP Tariff Structure that Can and Should Be Adopted In This Proceeding.

1. Benefits of Dynamic Rates – Real-Time Pricing

From the outset in Exhibit JARP-01, JARP-Enel X clearly demonstrated the numerous benefits of RTP.³² The granularity and precision of RTP rates, particularly those based on day-of pricing as JARP and Enel X propose, ensure that customers are incentivized to consume electricity when it is most abundant and to refrain from consuming when it is most scarce based on actual grid conditions. Because wholesale electricity prices and marginal greenhouse gas (GHG) emissions are tightly correlated in California, the shedding or shifting of load in response to RTP price signals will also lower overall GHG emissions from electricity generation. Much of this GHG impact comes from shifting load towards times when renewables are being curtailed, and the marginal emissions rate is 0 kg CO₂ per kWh.³³

There does not currently exist a retail-rate-design structure to encourage the dynamic shifting of load to times of renewable curtailment. However, a real time pricing offering would achieve the same goals as CAISO's load shift product (PDR-LSR) but without any of the complexity or uncertainty associated with aggregating a minimum of 100 kW of capacity and bidding in an increase in load relative to a calculated baseline.³⁴

The economic efficiency and environmental benefits that RTP can enable are superior to those from simple time-of-use (TOU) rates and other less sophisticated dynamic rates. As noted in our testimony, economists estimate that even well-designed TOU rates capture only a fraction

³² Ex. JARP-01, Chapter (Ch.) 2 (JARP (Murtishaw)).

³³ *Id.*, Ch. 2, at pp. 2-3 to 2-6 (JARP (Murtishaw)).

³⁴ Ex. JARP-02, at pp. 8-9 (JARP-Enel X (Murtishaw-Mann)).

of the potential economic efficiencies provided by RTP.³⁵ Because TOU time periods are administratively determined, they cannot change in response to high wholesale prices that occur outside of the peak TOU time period, which can occur due to abnormal weather conditions or unplanned generation or transmission outages.³⁶ The 2018 Self-Generation Incentive Program (SGIP) Advanced Energy Storage Impact Evaluation found that modeled energy storage systems responding to the SCE RTP and SDG&E Grid Integration Rate (GIR) hourly dynamic rates substantially lowered GHG emissions and doubled the system cost savings compared to the default TOU rate.³⁷

While SDG&E's Critical Peak Pricing (CPP) rate (referred to "TOU+") may incentivize load reductions similar to RTP on the days of highest demand, its effectiveness is limited by the fact that TOU+ has predefined event hours. When high demand occurs outside of those event hours, as it did during the blackouts of August 14 and August 15, TOU+ cannot incentivize the load reductions that would have helped to prevent interruption of service. As our testimony showed, most of the price spike that occurred on August 15 occurred after 6:00 pm, which is after the 2 pm to 6 pm TOU+ event hours.³⁸ Moreover, the multi-agency preliminary root cause analysis indicates that CAISO initiated rotating outages after the TOU+ event hours on both days, at 6:38 pm on August 14 and 6:28 pm on August 15.³⁹

Even if the TOU+ window did encompass all likely times of capacity shortage, its multi-hour duration would be likely to result in a diluted response relative to shorter price spikes matching up with the time intervals of greatest grid need. For instance, on August 15, 2020, there were three spikes in real-time prices at the SDG&E Default Load Aggregation Point (DLAP):

³⁵ Ex. JARP-01, Ch. 2, at p. 2-1 (Murtishaw- (JARP)).

³⁶ *Id.*, Ch. 2, at pp. 2-4 to 2-5 (Murtishaw (JARP)).

³⁷ *Id.*, Ch. 2, at p. 2-4 (Murtishaw (JARP)).

³⁸ Ex. JARP-02, at pp. 6-7 (Murtishaw-Mann (JARP-Enel X))

³⁹ Preliminary Root Cause Analysis, *supra*, at p. 3.

- A 30-minute spike lasting from 2:30 pm PDT to 3:00 pm PDT
- A 1-hour spike lasting from 5:55 pm PDT to 6:55 pm PDT
- A 10-minute spike lasting from 7:45 pm PDT to 7:55 pm PDT⁴⁰

Flexible demand-side resources, such as air conditioning and water heating, may not have the ability to defer consumption for 4 hours, but would likely be able to shift consumption away from price spikes that are one hour or less in duration. Similarly, during a 4-hour TOU+ event, customer-sited energy storage systems with 2-hour duration (the most common duration for SGIP systems) would likely discharge at half their nameplate power rating throughout the event. By contrast, if directly responding to the August 15 price profile described above, these batteries would be able to discharge at full power during the times of greatest grid need and would even be able to charge up in between price spikes so as to be ready to provide additional grid services later in the evening.⁴¹

Besides their sub-hourly granularity, one additional benefit to using day-of prices versus day-ahead forecasts is that it enables demand-side resources to provide value in the case of inaccurate forecasts or unexpected contingencies. This was particularly apparent in August 2020, when day-ahead weather forecasts significantly over-predicted or under-predicted temperatures on some days, and additional factors such as heavy smoke and unexpected generator outages created grid conditions that could not have been accurately foreseen on the prior day. Demand-side resources hold the potential to help the Californian grid handle such challenging circumstances, and developing a dynamic price signal that captures real-time conditions as accurately as possible is essential to achieving this vision.⁴²

⁴⁰ Ex. JARP-02, at p. 7 (JARP-Enel X (Murtishaw-Mann)).

⁴¹ *Id.*

⁴² Preliminary Root Cause Analysis, *supra*, Table 5.1, at p. 60.

2. Description of JARP-Enel X RTP Tariff Structure.

JARP-Enel X's proposed RTP tariff structure was envisioned as being accessible to all customer classes on an opt-in basis. This opt-in approach would ensure that only customers who are aware of the benefits and risks associated with dynamic retail rates would enroll. This tariff structure would not be limited to customers with specific onsite technologies (unlike rates specific to solar, storage, or EV customers), although RTP customers would likely employ some combination of device automation and behavioral load-shifting measures to achieve a reduction in their monthly energy bills.⁴³ As Exhibit JARP-04 makes clear, automation of energy-consuming devices is becoming increasingly accessible even for residential customers, with smart-plug options available for as little as \$7 to \$15 per unit.⁴⁴

Although JARP-Enel X believe that there is significant additional value in capturing marginal transmission and distribution costs with location-specific time-varying rates (similar to SDG&E Vehicle Grid Integration's (VGI's) D-CPP hourly adder during the top 200 circuit-level peak demand hours), JARP-Enel X's proposed RTP tariff structure only modifies the generation portion of the otherwise applicable tariff (OAT) for the sake of simplicity. Customers would continue to pay the same fixed, distribution, transmission, public purpose, and other non-bypassable charges from the OAT as well as an adder to cover stranded above-market costs.⁴⁵

Exhibit JARP-01 describes a potential approach for developing a revenue-neutral energy rate that recovers both marginal energy prices as well as stranded above-market energy costs.⁴⁶ In Exhibit JARP-02, JARP-Enel X describe an alternative approach to developing a revenue-neutral energy rate, which involves taking the OAT energy rate and applying a credit equal to the

⁴³ Ex. JARP-04, at p. 1 (JARP-Enel X (Belenky)).

⁴⁴ *Id.*, at p. 2 (JARP-Enel X (Belenky)).

⁴⁵ Ex. JARP-01, Ch. 3, at pp. 3-1 to 3-3 (JARP (Murtishaw)).

⁴⁶ *Id.*, Ch. 3, at pp.3-2 to 3-4 (JARP (Murtishaw)).

load-weighted average of wholesale locational marginal pricing (LMPs) for each TOU period, and then applying the wholesale LMP cost.⁴⁷

It is JARP-Enel X's position that generation capacity costs should be recovered through a mechanism similar to Schedule VGI's hourly C-CPP adder, but with variable adder values depending on the level of capacity scarcity.⁴⁸ PG&E's proposed approach in its application for a Commercial Electric Vehicle Day-Ahead Hourly Real Time Pricing Pilot (DAHRTP-CEV) (A.20-10-011), which uses a Peak Capacity Allocation Factor methodology based on adjusted net load,⁴⁹ serves as an excellent example for SDG&E to follow. Similar to the energy rate, this new capacity adder would be offset by a credit on volumetric energy rates (for residential customers) or demand charges (for commercial/industrial customers) to ensure revenue neutrality, which is like the approach taken by SDG&E for its current critical peak pricing rates.

Much of the testimony has centered on the time-granularity of the proposed rate. Given that interval meters for non-residential customers record data at 15-minute time resolution, and residential customer meters can be reprogrammed from hourly resolution to 15-minute resolution for demand-response program participants, JARP and Enel X have proposed that an SDG&E RTP energy rate be offered with 15-minute granularity. These prices could be based on either the 15-minute average of the prices from the wholesale real-time 5-minute market, or taken directly from CAISO's fifteen-minute market (FMM).⁵⁰

⁴⁷ Ex. JARP-02, at pp. 3-5 (JARP-Enel X (Murtishaw-Mann)).

⁴⁸ Ex. JARP-01, Ch. 3, at p. 3-2 (JARP (Murtishaw)).

⁴⁹ A.20-10-011 (PG&E DAHRTP-CEV), at pp. 3-4; Prepared Testimony, Ch. 2, at p. 2-3 (PG&E (Streib)).

⁵⁰ Ex. JARP-01, Ch. 3, at p. 3 (JARP (Murtishaw)); Ex. JARP-02, at p. 8 (JARP-Enel X (Murtishaw-Ryan)).

3. Compliance of JARP-Enel X RTP Tariff Structure with Commission Rate Design Principles.

In the Email Ruling of July 17, 2020, ALJ McKinney referred to 10 guiding rate design principles that were adopted by the Commission for residential rates in D.14-06-029.⁵¹ It is JARP-Enel X's position that their RTP rate proposal meets these rate design principles as follows, with those principles grouped together as to their purpose:

- Rate Design Principle 1 (ensuring basic needs of low-income and medically vulnerable customers are met): JARP and Enel X prefer that the RTP rate offered to residential customers not include a tiered element, similar to other residential TOU rates that lack baseline quantities approved by the Commission, so as not to undermine the economic efficiency of the rate or discourage consumers who have electrified thermal and/or transportation end-uses from enrolling. RTP would be an optional rate, and tiered TOU and non-TOU options would remain available to low-income and medical baseline customers who benefit from them.
- Rate Design Principles 2, 3, and 9 (economic efficiency): RTP is unrivaled in incentivizing economic efficiency because no other rate design can match the accuracy of the price signals conveyed to customers by RTP, especially RTP based on day-of market prices. The pass-through of wholesale energy costs exposes customers directly to the marginal energy cost, and the use of multiple capacity adders better reflects the marginal capacity cost than the single adder used by the TOU+ and VGI rates.
- Rate Design Principles 4 and 5 (rates should encourage efficiency, conservation, and reduction of both coincident and non-coincident peaks): RTP encourages efficiency and conservation at the times reductions in usage are most valuable to the grid. RTP clearly incentivizes reductions in coincident peak usage, again when those reductions are most valuable. JARP and Enel X do not believe there is much value in reducing individual customer's non-coincident maximum loads, and RTP does not per se incentivize such reductions. However, for non-residential customers any non-coincident distribution or transmission demand charges from the otherwise applicable tariff would remain in place.

⁵¹ ALJ's Email Ruling (July 17, 2020), at 4.

- Rate Design Principle 6 (rates should be stable and understandable): RTP is inherently unstable, but rate stability is a trade-off with economic efficiency. Similarly, while RTP may not be the most easily understood rate, there is also a tension between ease of understanding and economic efficiency. The simplest rates for customers to understand are those with fixed monthly bills or flat rates.
- Rate Design Principles 7 and 8 (rates should avoid cross-subsidies and incentives should be explicit): The RTP we have proposed is based on marginal energy and capacity costs. There are no deliberate cross-subsidies or administratively-determined (as opposed to market-based incentives).
- Rate Design Principle 10 (transitions to new rates should emphasize customer understanding): As an optional rate, education and outreach needs are much lower than they are for default rates. Like other advanced rates for EVs or storage owners, third-parties will be largely responsible for educating customers and managing their experiences on the rate.

4. Proposed Implementation of JARP-Enel X RTP Tariff Structure.

JARP-Enel X propose that the Commission conduct at least three workshops with SDG&E and interested parties to finalize the design of the RTP rate(s) that will be offered to each customer class. Following the workshops, the Commission should require SDG&E to file a Tier 3 advice letter with the final rate details and estimated budget for implementation and evaluation of the RTP tariffs. The Tier 3 advice letter should be due no later than 120 days after the Commission adopts the final decision in this proceeding.⁵²

JARP -Enel X recommend that the RTP rates be available to all residential, general service, and agricultural customers without limitation, the same as TOU+. However, if the Commission has concerns about the implications of RTP, in Exhibit JARP-02, JARP-Enel X did address an alternative implementation of a pilot that would initially limit enrollment.⁵³ Because non-residential rates generally include fixed charges and demand charges, there is less concern

⁵² Ex. JARP-02, at p. 19 (JARP-Enel X (Murtishaw-Mann)).

⁵³ *Id.*, at p. 17 (JARP-Enel X (Murtishaw-Mann)).

about cost-shifting among the non-residential rate classes. Accordingly, if the Commission decides to cap enrollment for residential customers due to concerns about cost-shifting, JARP-Enel X recommend that the Commission allow unlimited enrollment among non-residential customers.

In terms of developing the capabilities to offer the adopted RTP tariff(s), Exhibit JARP-01 proposes a two-pronged implementation structure in which SDG&E is required to develop a basic set of capabilities that will make the rate(s) operational, while third parties are permitted to offer RTP customers more comprehensive energy management services.⁵⁴ This approach would limit the new capabilities that SDG&E will be required to develop—thereby minimizing the cost to ratepayers—while expanding the opportunity for market players to develop new and innovative approaches to improve customer response to real-time price signals.

To this end, JARP-Enel X propose that SDG&E be tasked with developing the following limited set of capabilities:

1. *Meter reprogramming*: If the RTP rate is adopted as proposed, customer bills will be calculated using either the CAISO fifteen-minute market or five-minute real-time market prices. Because non-residential meters are already programmed to read in 15-minute increments, SDG&E will only be required to reprogram the meters of residential customers that desire to participate in the rate, and whose meters currently transmit only hourly data.⁵⁵ SDG&E already possesses the technical capabilities to reprogram customer meters and does so routinely for SDG&E customers participating in demand response programs. In Exhibit JARP-03, SDG&E confirmed that, pursuant to SDG&E Electric Rule 32, SDG&E is obliged to reprogram the meter of any residential customer from 60-minute to 15-minute data resolution at the request of the demand response provider until

⁵⁴ Ex. JARP-01, Ch. 4, at p. 4-1 ((JARP) Belenky).

⁵⁵ *Id.*, Ch. 4, at p. 4-2 (JARP (Belenky)).

the approved funds for this activity are exhausted.⁵⁶ Similarly, in that same exhibit, SDG&E also confirmed that it has already reprogrammed the meters of approximately 329,000 residential customers to a 15-minute configuration.⁵⁷

2. *RTP rate portal*: SDG&E will need to provide customers on the RTP rate visibility into the prevailing market prices of electricity. This can be accomplished via a basic portal that pulls from CAISO OASIS, and displays to users, the relevant market prices available via the RTP tariff(s).⁵⁸ Further, JARP-Enel X propose that SDG&E develop an Application Programming Interface (API) that pushes RTP signals to anyone who would like to subscribe to the API.⁵⁹ This would eliminate the need for some customers to proactively check SDG&E's website for price information and could improve response rates. Versions of such portals already exist—ComEd's Hourly Pricing Program offers a good example⁶⁰—and can be used as templates for SDG&E's portal.
3. *Billing System Adjustments*: SDG&E will be required to update its billing system to be able to bill customers based on the available RTP rate(s).

Beyond these basic capabilities, it is JARP-Enel X's position that third parties be permitted to offer additional energy management services to help customers maximize success on an RTP rate. Such services could include text alerts that notify customers of anticipated high (or low) prices, direct load control by way of authorized connected devices based on specific user preferences, customized views comparing customers' historic energy usage to the prevailing price of electricity, and education materials outlining personalized load shift options, among others.⁶¹

⁵⁶ Ex. JARP-03, at pp. 2-3 (SDG&E Response to JARP-Enel X Data Request No. 01). During hearings on October 30, 2020, SDG&E witness Montanez confirmed that she worked in the preparation of the responses to this data request. RT at p. 257 (SDG&E (Montanez)).

⁵⁷ Ex. JARP-03, at pp. 2-3 (SDG&E Response to JARP-Enel X Data Request No. 01).

⁵⁸ Ex. JARP-01, Ch. 4, at p. 4-2 (JARP (Belenky)).

⁵⁹ *Id.*, Ch. 4, at p. 4-2 and p. 4-3 ((JARP (Belenky)).

⁶⁰ ComEd's Hourly Pricing Portal: <https://hourlypricing.comed.com/live-prices> .

⁶¹ Ex. JARP-01, Ch. 4, at p. 4-4 (JARP (Belenky)).

While SDG&E could develop these capabilities in house, leveraging third-party players to take on certain aspects of RTP implementation will limit the costs borne by ratepayers. In that regard, SDG&E witness Montanez testified that SDG&E would not object to third parties using their own resources to conduct marketing, education, and outreach for RTP rates.⁶²

While third-parties are already well-positioned to offer some of these services without Commission action, they will be unable to provide a fully customized experience without access to customer meter data.⁶³ SDG&E has already built out the infrastructure and processes that allow customers to authorize data access to third-parties for the purposes of demand response. However, at this point, their use is limited to serving demand response programs.⁶⁴ JARP-Enel X recommend that the Commission take action to allow these existing systems to be leveraged in implementing an RTP tariff.

C. Objections Raised by Other Parties to the JARP-Enel X Proposals Are Vague, Unsubstantiated, or Can Be Addressed by Additional Clarifications or Minor Adjustments in Tariff Design.

1. General Objections to RTP Are Vague and Do Not Alter the Merits of the JARP-Enel X RTP Rate Proposal.

Objections raised to RTP have not been directed to the merits of the JARP-Enel X proposal, but rather on broadly stated concerns about the potential for cost-shifting, marketing costs, billing complexities, or other implementation details. As The Utility Reform Network (TURN) witness Cheng testified: “TURN is not opposed to the concept of an RTP rate per se.”⁶⁵

Despite this apparent support for the concept of RTP rates, TURN nevertheless generally objects to adoption of an RTP rate here based largely on TURN’s claims regarding the potential for cost-shifting in the residential class, with claims that are speculative in nature. For example,

⁶² RT at 294 (SDG&E (Montanez)).

⁶³ Ex. JARP -01, at p. 4-5 (JARP (Belenky)).

⁶⁴ Ex. JARP -01, at pp. 4-5 – 4-6 (JARP (Belenky)).

⁶⁵ Ex. TURN-03, at p. 2 (TURN (Cheng)).

TURN states that “Rate options that promise cost-savings and market benefits often result in cost-shifting and create social injustice...”⁶⁶ This generalization is not supported in TURN’s testimony by any specific examples or quantitative evidence. Further, it is not necessarily true that reduced revenue collection that is not matched by corresponding avoided costs is problematic.⁶⁷ To the extent that some customers may be structural winners on a new rate schedule, that benefit may be unwinding an existing cross-subsidy. For example, under a non-TOU rate, a CARE customer may have the same total monthly energy consumption as another CARE customer in the same climate zone but with a peakier load profile. As these two CARE customers are defaulted to a TOU rate, the less “peaky” CARE customer that is less expensive to serve will pay less and the peakier CARE customer will pay more. To the extent that existing cross-subsidies are reversed, the offering of RTP supports Rate Design Principles 7 and 8, listed above.

Similarly, SDG&E, in its rebuttal testimony to Exhibit JARP-02, testifies: “SDG&E believes that there is potential for a new dynamic rate to provide customer and other benefits but cautions that the JARP proposal is attempting to run before learning to walk.”⁶⁸ SDG&E’s objections stem from certain design elements, not to RTP rates per se, which SDG&E already offers to certain EV customers.

2. Concerns as To Whether Participants’ Peak Load Reductions Avoid Costs To SDG&E Are Without Merit.

SDG&E questions whether RTP participants’ reduction in coincident peak loads will reduce SDG&E’s generation capacity costs because “system load is constantly changing from year to year” and “[t]here is virtually no way to attribute system load reduction in a given year to

⁶⁶ Ex. TURN-02, at p. 3 (TURN (Cheng)).

⁶⁷ Ex. JARP-02, at pp. 11-12 (JARP-Enel X (Murtishaw-Mann)).

⁶⁸ Ex. SDGE-22, at p. JM-3 (SDG&E (Montanez)).

specific customers.”⁶⁹ To the first point, it does not matter that system load changes from year to year. What drives SDG&E’s Resource Adequacy costs is whether SDG&E’s peak load is lower than it would have otherwise been. To the extent that RTP participants reduce their loads during peak intervals, which they should be expected to do because those intervals will correspond to the highest wholesale prices and day-ahead (or day-of) CPP-like capacity adders, RTP customers will contribute to lowering SDG&E’s peak load on those days.

To the second point, JARP and Enel X would point out that attributing peak load reductions to participants in various time-varying rates is routine.⁷⁰ Attributing load reductions to specific customers is precisely the reason that a utility conducts measurement and evaluation. If there were truly no way to attribute load reductions to specific customers, and no expectation that they would reduce loads in response to time-varying price signals, there would be no reason to offer TOU rates or any dynamic rate.

3. Community Choice Aggregation (CCA) Implementation Does Not Diminish the Benefits or Need for Utility RTP Rates.

In Exhibit SDGE-22, SDG&E witness Montanez notes that SDG&E’s bundled load is projected to decrease by 60% by 2023 due to the implementation of CCA programs in SDG&E’s territory.⁷¹ Based on this fact, witness Montanez offers two arguments that militate against requiring SDG&E to implement RTP. First, because the RTP elements of the proposed rate affect the commodity, or generation, components of the rates, which CCAs control, CCAs would be responsible for offering the RTP rate structure.⁷² Witness Montanez testifies: “SDG&E believes it is extremely unlikely that a CCA would willingly choose to provide an optional RTP

⁶⁹ Ex. SDGE-22, at p. JM-13 (SDG&E (Montanez)).

⁷⁰ Ex. JARP-01, Ch. 2, at pp. 2-6 and 2-7 (JARP (Murtishaw)).

⁷¹ Ex. SDGE-22, at pp. JM-13 – JM-14 (SDG&E (Montanez)).

⁷² *Id.*, at p. JM-14 (SDG&E (Montanez)).

rate....”⁷³ Witness Montanez’ testimony implies that since there is a low probability that a CCA will implement RTP, the implementation of the rate by SDG&E will yield few participants and little value. The second line of argument is that the “significant investments” necessary to implement RTP must be weighed against the fact that “only a small subset of opt-in bundled customers will potentially benefit.”⁷⁴

SDG&E offers no evidence beyond subjective opinion to support the first argument. As Exhibit JARP-03 demonstrates, by SDG&E’s responses to JARP-Enel X Data Request 01, SDG&E admitted that it had not received any confirmation from either San Diego Community Power or Solana Energy Alliance (two of the CCAs that are, or will soon be, active in SDG&E’s territory) as to whether either would offer an RTP rate if the Commission were to require SDG&E to offer such a rate.⁷⁵ In response to SDG&E’s second claim, JARP-Enel X witness Murtishaw testified that the anticipated migration to CCA service still leaves 40% of SDG&E’s customer base that can benefit from an RTP offering.⁷⁶ Given the SDG&E’s customer base (1.4 million accounts), this is still a substantial population that can benefit from RTP. Witness Murtishaw also explained that because billing for CCAs is performed by the utilities’ billing systems, SDG&E needs to have RTP billing capability in place for a CCA to offer an RTP tariff.⁷⁷ These facts support the Commission requiring SDG&E to offer an RTP rate.

⁷³ Ex. SDGE-22, at pp. JM-14 (SDG&E (Montanez)).

⁷⁴ *Id.*

⁷⁵ Ex. JARP-03, at p. 2 (SDG&E Data Response to JARP-Enel X Data Request No. 01).

⁷⁶ RT at p. 266 (JARP (Murtishaw)).

⁷⁷ *Id.*

4. Objections to SDG&E Offering an RTP Rate to Residential Customers Are Also Without Merit.

a. Cost Shifting and Enrollment Caps

It is JARP-Enel X's expectation that the RTP rate will be based on marginal cost and cost of service.⁷⁸ SDG&E states that this may not be the case, at least with respect to our analysis using the EV-TOU-5 rate as basis,⁷⁹ but only JARP and Enel X have put forward a proposed RTP rate schedule. JARP and Enel X are also prepared to work with SDG&E to finalize the design of the RTP rate to align capacity adders with SDG&E's avoided capacity costs. These capacity adders would be based in concept on SDG&E's existing TOU+ adders, to which SDG&E has not raised cost-shifting objections.

In order to provide the Commission with some sense of the potential for cost shifting, JARP and Enel X presented analysis of revenue implications in Exhibit JARP-02. With respect to the cost shifting potential for structural benefiteres in the residential class, Exhibit JARP-02 demonstrates that if the 10% of the residential class with the largest structural benefit were to enroll in the JARP-Enel X proposed RTP rate and did not modify their load profile, those customers would save an average of \$71.96 per year.⁸⁰ If re-allocated to all residential customers, the resulting revenue loss from participants would increase non-participants bills by **\$7.26 per year.**⁸¹

TURN characterizes this outcome as "anything but 'very little.'" ⁸² While "very little" is a subjective term, JARP and Enel X would argue that a cost-shift of 60 cents per month to non-participating households is "very little" by any reasonable measure. Further, while JARP-Enel X

⁷⁸ Ex. JARP-01, Ch. 3 at p. 3-5 (JARP (Murtishaw)); Ex. JARP-02, at p. 3 (JARP-Enel X (Murtishaw-Mann)).

⁷⁹ Ex. SDGE-22, at p. JM-10 (SDG&E (Montanez)).

⁸⁰ Ex. JARP-02, at p. 11 (JARP-Enel X (Murtishaw-Ryan)).

⁸¹ *Id.*

⁸² Ex. TURN-03, at p. 3 (TURN (Cheng)).

are not necessarily opposed to a mechanism that tracks undercollections from participants and reallocates them back to participants (as long as overcollections are also reallocated back to participants), it hardly seems worth the effort.

TURN also seems to misunderstand our analysis in asserting that “[i]f the structural winner percentage ends up being 30%, that would mean \$30 million each year [i.e., three times the amount of the total cost shift that we calculated⁸³] would be shifted to other residential customers...”⁸⁴ However, the JARP-Enel X structural benefiter analysis was based on the 10% of the population with the greatest structural benefit.⁸⁵ Any subsequent decile of the residential population would necessarily receive a lower average structural benefit than the top decile.

Regarding the potential cost shift that *could* occur if the bill savings of customers who do shift their loads in response to an RTP price signal do not correspond well to SDG&E’s avoided costs, SDG&E incorrectly asserts that JARP-Enel X did not provide a cost-shift analysis.⁸⁶ Contrary to that claim, JARP-Enel X did in fact provide such analysis in Table 4 of Exhibit JARP-02.⁸⁷ As indicated in Exhibit JARP-02, depending on the level of load shift during the top 150 load hours of the year and the actual generation capacity savings that accrue to SDG&E, a residential RTP customer could underpay by as little as \$5.10 or overpay by as much as \$30.31 per year.⁸⁸

Given the small degree of undercollection that could theoretically occur on the JARP-Enel X proposed RTP rate, that RTP rate should be offered as an optional rate with no

⁸³ Note that TURN slightly overstates the cost shift by multiplying the per participant savings times 10% of the total number of SDG&E’s electric accounts (1.4 million) rather than the 1.3 million residential accounts. Ex. TURN-03, at p. 3, n. 2 (TURN (Cheng)).

⁸⁴ Ex. TURN-03, at p. 3 (TURN (Cheng)).

⁸⁵ Ex. JARP-02, at p. 11 (JARP-Enel X (Murtishaw-Ryan)).

⁸⁶ Ex. SDGE-22 at p. JM-12 (SDG&E (Montanez)).

⁸⁷ Ex. JARP-02, at p. 14 (JARP –Enel X (Murtishaw-Mann)).

⁸⁸ *Id.*

enrollment caps.⁸⁹ However, if the Commission is concerned about the extent of potential cost-shifting, the Commission could either order SDG&E to track undercollections in order to reallocate them to participating customers or place a cap on enrollment. JARP and Enel X urge the Commission not to do both since this would be a redundant cost-control restriction.

If the Commission decides to pilot RTP rates before offering them to all customers, JARP-Enel X witnesses testified that the cap on residential enrollments be at least 35,000 customers, which is a bit less than 3 percent of SDG&E's total residential customer accounts.⁹⁰ In response, TURN described this proposed cap as "excessive, unreasonable, and may produce inappropriate levels of shift" and instead seeks to limit enrollment to a mere 1,000 customers.⁹¹

TURN's suggestion is meritless. As demonstrated by the JARP-Enel X structural benefiter analysis, which no party rebutted, the worst-case annual cost shift to non-participants would amount to a little over \$7 per residential customer per **year**.⁹² However, this result rested on an assumed enrollment of roughly 130,000 customers with the greatest structural benefit. Only if RTP enrollment were to reach the 35,000 participant cap (i.e. 30% of the number of households used in the worst-case analysis) **and** all participants were among the highest decile of structural benefitters would the cost shift to non-participants possibly exceed \$2 per residential customer year.⁹³ Such a *de minimis* impact, especially give the benefits of RTP rates, should only further assure the Commission that the JARP-Enel X proposed RTP rate is reasonable.

⁸⁹ Ex. JARP-02, at p. 17 (JARP –Enel X (Murtishaw-Mann)).

⁹⁰ *Id.*

⁹¹ Ex. TURN-03, at p. 5 (TURN (Cheng)).

⁹² Ex. JARP-02, at p. 11 (JARP-Enel X (Murtishaw-Ryan)).

⁹³ \$7.26 per year x 35,000/130,000 = \$1.95 per year.

b. Rate Complexity

In its rebuttal testimony, SDG&E contends that the JARP-Enel X proposed RTP rate is fundamentally dissimilar to other dynamic rates offered by SDG&E and other utilities.⁹⁴ For example, SDG&E states that, unlike an RTP billed at 15-minute intervals, the Oklahoma Gas & Electric Company (OG&E) SmartHours-VPP uses rates with static TOU periods.⁹⁵

However, the primary purpose for JARP-Enel X addressing SmartHours-VPP in Exhibit JARP-02 is to show that rates with variable capacity adders instead of one single capacity adder, such as CPP/TOU+, have been adopted elsewhere and are in use.⁹⁶ Specifically, SmartHours-VPP has a base on-peak rate and three different adders that may be imposed depending on day-ahead forecasts.

SDG&E also states that other electricity providers used as a comparison offer less complex methodologies “such as hourly day-ahead pricing.”⁹⁷ However, as Exhibit JARP-01 makes clear, the ComEd residential RTP rate is based on the real-time five-minute market, even though billing is done on an hourly basis because the meters are programmed to record usage on an hourly basis.⁹⁸ Similarly, as witness Murtishaw explained during the workshop on dynamic pricing, retailers in other markets such as Griddy and Octopus US (formerly Evolve Energy) give residential customers direct access to the real-time five-minute wholesale market for a monthly fee.⁹⁹

⁹⁴ Ex. SDGE-22, at pp. JM-4 – JM-8 (SDG&E (Montanez)).

⁹⁵ *Id.*, at p. JM-7 (SDG&E (Montanez)).

⁹⁶ Ex. JARP-02, at pp. 9, 15-16 (JARP-Enel X (Murtishaw-Ryan)).

⁹⁷ Ex. SDGE-22, at p. JM-8 (SDG&E (Montanez)).

⁹⁸ Ex. JARP-01 at Chap. 2 p. 8 and Chap. 3 p. 4 (Murtishaw-Belenky (JARP))

⁹⁹ A.10-07-009-A91-03-002 (SDG&E GRC Phase 2) SDG&E Response with Dynamic Pricing and Real Time Pricing Workshop Report (October 29, 2019), Attachment E, slide 6.

c. Day-Ahead vs. Day-of Price Signals

SDG&E claims that JARP and Enel X failed to establish a need for day-of pricing rather than day-ahead pricing and argues that the prices between the two do not differ enough to warrant the additional investment.¹⁰⁰ Both contentions are wrong.

First, as discussed in Subsection B.1. above, regardless of the extent to which real-time and day-ahead prices diverge, day-ahead pricing suffers from the inherent disadvantage that it cannot induce customers to adjust load in response to unexpected circumstances. Second, SDG&E's choice to present the differences in the hourly prices averaged across an entire year obscures the significant differences in the volatility of the day-ahead and real-time markets. In Exhibit JARP-03, SDG&E discussed in response to JARP-Enel X Data Request No. 01 that the standard deviation of the real-time prices is \$77/MWh, much greater than the standard deviation of day-ahead prices, which is \$24/MWh.¹⁰¹ The larger standard deviation in real-time prices indicates greater variation in prices, which offers the potential for superior economic efficiency as customers respond to the greater variability in real-time grid conditions as opposed to day-ahead forecasts of real-time conditions.

d. Extent of Marketing, Education and Outreach (ME&O) Needed to Implement an Optional RTP Rate

As JARP and Enel X testified in Exhibit JARP-02, SDG&E will not have to conduct extensive marketing efforts to educate customers about RTP and encourage them to enroll on the rate.¹⁰² Storage, demand response, and electric vehicle charging vendors will perform the bulk of customer engagement and acquisition activities, as third parties have done for programs like the

¹⁰⁰ Ex. SDGE-22 at pp. JM-8 – JM-9 (SDG&E (Montanez)).

¹⁰¹ Ex. JARP-03, at p. 4 (SDG&E Data Response to JARP-Enel X Data Request No. 1).

¹⁰² Ex. JARP-02, at p. 11 (JARP-Enel X (Murtishaw-Mann)).

California Solar Initiative, Self-Generation Incentive Program, and Demand Response Auction Mechanism.¹⁰³

However, SDG&E witness Montanez asserted in her rebuttal testimony that SDG&E needs to be more involved in ME&O because the utility “could face a backlash if a third party misinformed a customer about the RTP rate.”¹⁰⁴ Not only does SDG&E provide no evidence of third parties ever misinforming customers about its rates, but in her oral testimony, witness Montanez confirmed that SDG&E would not object to third parties using their own resources to conduct ME&O for RTP rates.¹⁰⁵ Moreover, JARP and Enel X would argue that the potential for any load-management vendor to misinform a customer about an SDG&E rate exists for any of SDG&E’s time-varying rates.

SDG&E witness Montanez, however, also argues that “JARP’s testimony does not account for the costs of coordinating with third parties...”¹⁰⁶ JARP and Enel X do not understand what the “costs of coordinating” would consist of. SDG&E did not describe any costs of coordinating with third-party vendors offering customers load management services for other tariffs or programs. We do not believe that any coordination, beyond the initial ME&O activities and setting up an RTP website, is required.

SDG&E exaggerates the ME&O efforts needed to make customers aware of RTP by drawing a comparison of RTP and TOU implementation. The offering of an optional rate is simply not an appropriate analog to the defaulting of millions of residential accounts across the State to a time-varying rate from a non-time-varying rate. Rather than describing the ME&O efforts directed at a rate that transitioned 972,000 residential customers to TOU for the first

¹⁰³ Ex. JARP-02, at p. 11 (JARP-Enel X (Murtishaw-Mann)).

¹⁰⁴ Ex. SDGE-22, at p. JM-15 (SDG&E (Montanez)).

¹⁰⁵ RT at 294 (SDG&E (Montanez)).

¹⁰⁶ Ex. SDGE-22, at p. JM-15 (SDG&E (Montanez)).

time,¹⁰⁷ SDG&E should have referred instead to its marketing efforts promoting TOU+ or its EV-TOU rate plans. Discussion of default TOU ME&O is inapposite.

e. Customer Understanding of TOU Rates

SDG&E witness Montanez alleges that the offering of optional RTP rates to customers could somehow undermine customers’ understanding of TOU rates.¹⁰⁸ However, these allegations are vague and unsubstantiated. Witness Montanez does not explain how ME&O materials that offer customers a new optional RTP rate would undermine their understanding of the default TOU rate. If that were true, this phenomenon would also seem to apply to any customer awareness efforts to promote TOU+ or the EV rates.

SDG&E witness Montanez also encourages the Commission “to be mindful of the timing of current statewide efforts regarding transitions to TOU rates.”¹⁰⁹ JARP-Enel X does not understand SDG&E’s concern regarding the timing of TOU ME&O activities. As witness Montanez testified: “SDG&E completed its transition to TOU rates for all customers (residential and non-residential) in 2020.”¹¹⁰ Elsewhere, Ms. Montanez explains that due to the replacement of SDG&E’s customer information system, a new RTP rate cannot go live until 2022.¹¹¹ It is unclear how ME&O activities related to informing customers about a new optional rate would interfere with TOU efforts since all customers will have been on TOU rates for at least two years before a new RTP rate can go into effect.

f. IT Costs Related to RTP Implementation for Residential Customers

In Exhibit SDGE-22, SDG&E witness Montanez testifies against adopting an RTP rate based on the CAISO FMM prices due to the “exponential increase” in data storage requirements

¹⁰⁷ Ex. SDGE-22, at p. JM-17 (SDG&E (Montanez)).

¹⁰⁸ *Id.*, at pp. JM-17- JM-18 (SDG&E (Montanez)).

¹⁰⁹ *Id.*, at p. JM-18 (SDG&E (Montanez)).

¹¹⁰ *Id.*, at p. JM-17 (SDG&E (Montanez)).

¹¹¹ *Id.*, at p. JM-25 (SDG&E (Montanez)).

and other costs, in part due to the 60-minute configurations of residential meters.¹¹² Specifically, witness Montanez asserts that “JARP’s RTP rate proposal for residential customers would require an increase of eight times the data, resulting in 192 intervals (15-minute, 2-channel) per day.”¹¹³ Witness Montanez subsequently specifies several areas in which a change of this magnitude could be cause for concern, including increases in the amount of Field Area Routers (FARs) and lower overall communication over the network.¹¹⁴

However, as the record makes clear, SDG&E has already developed the infrastructure to reprogram customer meters to read at 15-minute increments and does so routinely.¹¹⁵ In fact, as Ms. Montanez testified during the evidentiary hearings, 329,000 residential meters have already been reprogrammed.¹¹⁶ This represents a quarter of SDG&E’s 1.3 million residential customers.¹¹⁷

Therefore, it is inaccurate to characterize meter reprogramming as a new and substantial barrier to the implementation of an RTP rate. Rather, it is something SDG&E already has the capability to do and has been doing at some scale for several years.

Finally, although JARP-Enel X cannot predict which customers will opt into the RTP rate, it is reasonable to assume that many will be those who have some track record in paying attention to their energy use as participants in DR programs. Thus, it is entirely possible that the number of additional meters SDG&E will need to reprogram to implement an RTP rate, at least initially, will be low.

¹¹² Ex. SDGE-22, at p. JM-23 – JM-24 (SDG&E (Montanez)).

¹¹³ *Id.*, at p. JM-24 (SDG&E (Montanez)).

¹¹⁴ *Id.*, at p. JM-24 (SDG&E (Montanez)).

¹¹⁵ Ex. JARP-03, at p. 3 (SDG&E Data Response to JARP-Enel X Data Request No. 1).

¹¹⁶ RT at p. 258 (SDG&E (Montanez)).

¹¹⁷ Ex. SDGE-22, at p. JM-11 (SDG&E (Montanez)).

g. Cost of Enabling Technologies and Accessibility to Lower-Income Households

In TURN's Supplemental Testimony, Exhibit TURN-04, TURN witness Cheng asserts that "increasing penetration of smart thermostats and smart plugs is unlikely to mitigate the potential inequities created by the proposed RTP tariff."¹¹⁸ To support this claim, witness Cheng notes that the cost of energy storage, which can facilitate customer adoption of an RTP rate, is much higher than other available devices such as smart plugs and thermostats.¹¹⁹ Moreover, witness Cheng testifies that, while it may be possible for smart plugs and thermostats to help customers respond to RTP rates, most customers will not be able to program their own devices to respond to real-time prices.¹²⁰

However, JARP-Enel X witness Belenky in Exhibit JARP-04 clearly rebuts these claims as misrepresenting JARP-Enel X's written and oral testimony. While witness Belenky testified that witness Cheng is correct that the cost of energy storage far exceeds that of smart plug and thermostats, the adoption of storage is not a prerequisite to participate in an RTP rate.¹²¹ According to witness Belenky, not only are smart thermostats and smart plugs, which can also help customer load shift, available at much lower prices, a variety of incentives exist that further bring down their cost.¹²² In response to Commissioner Shiroma's oral comments during the evidentiary hearing on October 30 noting the importance of factual references,¹²³ Exhibit JARP-04 provides additional detail and citations regarding the prevailing market prices of select smart devices and available incentive programs that further bring down their costs.¹²⁴

¹¹⁸ Ex. TURN-04, at p. 1 (TURN (Cheng)).

¹¹⁹ *Id.*

¹²⁰ *Id.*

¹²¹ Ex. JARP-04, at p. 1 (JARP-Enel X (Belenky)).

¹²² *Id.*, at p. 2 (JARP-Enel X (Belenky)).

¹²³ RT at 279 (Commissioner Shiroma).

¹²⁴ Ex. JARP-04, at pp. 1-3 (JARP-Enel X (Belenky)).

Finally, JARP-Enel X do not envision that most RTP customers will program their own devices to respond to an RTP rate. Rather, in Ex. JARP-01, JARP explicitly proposes that third-parties be permitted to help customers take advantage of such rates, including by providing “device integrations that allow smart devices to turn on/off or change settings in response to real-time price signals...”¹²⁵ Thus, the assertion that “increasing penetration of smart thermostats and smart plugs is unlikely to mitigate the potential inequities created by the proposed RTP tariff”¹²⁶ is not supported by the record in this proceeding.

5. No Evidence Has Been Presented to Foreclose Adoption of JARP-Enel X’s Proposed RTP Rate for Non-Residential Customers.

SDG&E’s objections to JARP-Enel X’s proposed RTP rate center on claims of the costs and complexity of reprogramming customers’ meters or the need to conduct extensive ME&O.¹²⁷ Not only are these objections without merit, for the reasons discussed above, but all have been raised in the context of the residential class since non-residential customers are already billed in 15-minute intervals and many non-residential customers are capable of understanding more complex rates without much utility-led ME&O. With the exception of one reference by SDG&E witness Montanez to the cost shift implications of the worst-case structural benefiter analysis in Exhibit JARP-02,¹²⁸ no other objections have been raised in any testimony specific to non-residential customers.

**IV.
CONCLUSION**

For the reasons stated herein, the JARP and Enel X respectfully request that the Commission approve the JARP-Enel X proposed RTP rate and implementation approach in its

¹²⁵ Ex. JARP-01, Ch. 4, at p. 4-4 (JARP (Belenky)).

¹²⁶ Ex. TURN-04, at p. 1 (TURN (Cheng)).

¹²⁷ See, *e.g.*, Ex. SDGE-22, at JM-23 (SDG&E (Montanez)).

¹²⁸ Ex. SDGE-22, at p. JM-12 (SDG&E (Montanez)).

decision in this proceeding. The JARP-Enel X RTP rate proposals are supported by the legal and policy framework that governs this issue, are supported by the evidentiary record, are just and reasonable, and should be adopted in that decision consistent with the JARP-Enel X recommendations summarized in the Summary of Recommendations of this Joint Opening Brief at pages iii through iv and the Introduction (Section I).

Respectfully submitted,

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