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Ratesetting

TO PARTIES OF RECORD IN RULEMAKING 22-07-005:

This is the proposed decision of Administrative Law Judge Stephanie Wang. Until and unless the Commission hears the item and votes to approve it, the proposed decision has no legal effect. This item may be heard, at the earliest, at the Commission's April 27, 2023 Business Meeting. To confirm when the item will be heard, please see the Business Meeting agenda, which is posted on the Commission's website 10 days before each Business Meeting.

Parties to the proceeding may file comments on the proposed decision as provided in Rule 14.3 of the Commission's Rules of Practice and Procedure (Rules).

The Commission may hold a Ratesetting Deliberative Meeting to consider this item in closed session in advance of the Business Meeting at which the item will be heard. In such event, notice of the Ratesetting Deliberative Meeting will appear in the Daily Calendar, which is posted on the Commission's website. If a Ratesetting Deliberative Meeting is scheduled, *ex parte* communications are prohibited pursuant to Rule 8.2(c)(4).

/s/ MICHELLE COOKE
Michelle Cooke
Acting Chief Administrative Law Judge

MLC:nd3
Attachment

Decision **PROPOSED DECISION OF ALJ WANG (Mailed 3/17/2023)**

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Advance Demand Flexibility Through Electric Rates.	Rulemaking 22-07-005

DECISION ADOPTING ELECTRIC RATE DESIGN PRINCIPLES AND DEMAND FLEXIBILITY DESIGN PRINCIPLES

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DECISION ADOPTING ELECTRIC RATE DESIGN PRINCIPLES AND DEMAND FLEXIBILITY DESIGN PRINCIPLES

Summary

This decision adopts the following updated Electric Rate Design Principles for the assessment of the rate design proposals of Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company:

i. All residential customers (including low-income customers and those who receive a medical baseline or discount) should have access to enough electricity to ensure that their essential needs are met at an affordable cost.

ii. Rates should be based on marginal cost.

iii. Rates should be based on cost causation.

iv. Rates should encourage economically efficient (i) use of energy, (ii) reduction of greenhouse gas emissions, and (iii) electrification.

v. Rates should encourage customer behaviors that improve electric system reliability in an economically efficient manner.

vi. Rates should encourage customer behaviors that optimize the use of existing grid infrastructure to reduce long-term electric system costs.

vii. Customers should be able to understand their rates and rate incentives and should have options to manage their bills.

viii. Rates should avoid cross-subsidies that do not transparently and appropriately support explicit state policy goals.

ix. Rate design should not be technology-specific and should avoid creating unintended cost-shifts.

x. Transitions to new rate structures should (i) include customer education and outreach that enhances customer understanding and acceptance of new rates, and (ii) minimize or appropriately consider the bill impacts associated with such transitions.

This decision also adopts the following new Demand Flexibility Design Principles to guide the development of demand flexibility tariffs, systems, processes, and customer experiences of Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company:

i. Demand flexibility tariffs should be designed in accordance with all of the Commission's Electric Rate Design Principles.

ii. Demand flexibility tariffs should provide a dynamic price signal in a standardized format that can be integrated into third-party distributed energy resource and demand management solutions.

iii. Dynamic prices should, to the extent feasible, accurately incorporate the marginal costs of energy, generation capacity, distribution capacity, and transmission capacity based on grid conditions.

iv. The systems and processes for calculating dynamic price signals should be able to include bundled and unbundled rate components so that any load serving entity can elect to participate.

v. Customers (including low-income customers and those who receive a medical baseline or discount) should have access to tools and mechanisms that enable them to plan and schedule their energy use while managing the monthly variability of their bills.

vi. Demand flexibility tariffs should provide marginal cost-based compensation for exports to enable economically efficient grid integration of customer-sited electrification technologies and distributed energy resources.

This proceeding remains open to address Phase 1 issues.

1. Background

On July 14, 2022, the Commission issued an Order Instituting Rulemaking to establish demand flexibility policies and modify electric rates to advance the following objectives: (a) enhance the reliability of California's electric system; (b) make electric bills more affordable and equitable; (c) reduce the curtailment of renewable energy and greenhouse gas (GHG) emissions associated with meeting the state's future system load; (d) enable widespread electrification of buildings and transportation to meet the state's climate goals; (e) reduce long-term system costs through more efficient pricing of electricity; and (f) enable participation in demand flexibility by both bundled and unbundled customers.

The assigned Administrative Law Judge (ALJ) held a prehearing conference on September 16, 2022. The assigned Commissioner issued a Scoping Memo and Ruling (scoping memo) on November 2, 2022 that requested comments on a staff proposal by the Commission's Energy Division (Staff Proposal) to propose updates to the Commission's existing Electric Rate Design Principles and propose new Demand Flexibility Design Principles to apply to Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), and San Diego Gas & Electric Company (SDG&E) (together, the IOUs).

On November 17, 2022, the Energy Division held a workshop to address stakeholder questions about the Staff Proposal.

The following parties filed opening comments on the Staff Proposal on December 2, 2022 and/or reply comments on January 4, 2023:[1] California Farm Bureau Federation, the California Large Energy Consumers Association, the Energy Producers and Users Coalition, California Manufacturers & Technology Association, Energy Users Forum, and Federal Executive Agencies (together, the Joint Large Ratepayers); California Community Choice Association (CalCCA); California Efficiency + Demand Management Council (CEDMC); California Environmental Justice Alliance (CEJA); California Energy Storage Alliance (CESA); Center for Accessible Technology (CforAT); Clean Coalition; Enchanted Rock LLC; Microgrid Resources Coalition (MRC); Natural Resources Defense Council (NRDC); PG&E; the Public Advocates Office of the California Public Utilities Commission (Cal Advocates); Small Business Utility Advocates (SBUA); Sierra Club; Solar Energy Industries Association (SEIA); SCE; SDG&E; The Utility Reform Network (TURN); Utility Consumers' Action Network (UCAN); Weave Grid, Inc. (Weave Grid); and 350 Bay Area and the Climate Center (together, 350/Climate Center).

This matter was submitted on January 24, 2023 upon filing of reply comments on the Staff Proposal.

2. Issues Before the Commission

The issues before the Commission are as follows:

a. Whether the Commission should adopt the proposed revised Electric Rate Design Principles applicable to all electric rates of the IOUs to advance current state goals; and

[1] Comments on the Staff Proposal were included in filed comments on the scoping memo, and reply comments on the Staff Proposal were included in filed reply comments on the scoping memo.

b. Whether the Commission should adopt the proposed Demand Flexibility Design Principles to guide the development of demand flexibility tariffs, systems, processes, and customer experiences of the IOUs.

3. Electric Rate Design Principles

In Decision (D.) 14-06-029, the Commission adopted ten principles (2014 Rate Design Principles) for use in evaluating residential electric rate design changes of the IOUs:[2]

i. Low-income and medical baseline customers should have access to enough electricity to ensure basic needs (such as health and comfort) are met at an affordable cost.

ii. Rates should be based on marginal cost.

iii. Rates should be based on cost-causation principles.

iv. Rates should encourage conservation and energy efficiency.

v. Rates should encourage reduction of both coincident and non-coincident peak demand.

vi. Rates should be stable and understandable and provide customer choice.

vii. Rates should generally avoid cross-subsidies, unless the cross-subsidies appropriately support explicit state policy goals.

viii. Incentives should be explicit and transparent.

ix. Rates should encourage economically efficient decision-making.

x. Transitions to new rate structures should emphasize customer education and outreach that enhances customer understanding and acceptance of new rates, and minimizes and appropriately considers the bill impacts associated with such transitions.

[2] D.14-06-029 at Conclusion of Law 4.

The 2014 Rate Design Principles were based upon the Bonbright Principles[3] and previous Commission decisions, including D.08-07-045.[4] Since the adoption of the 2014 Rate Design Principles, the Commission has applied these principles to the assessment of electric rate design proposals of the IOUs across customer classes.[5] In the Order Instituting Rulemaking for this proceeding, we established our intent to revisit and modernize these principles.[6]

The Staff Proposal presented the Energy Division's recommendations for modifying the 2014 Rate Design Principles to align with current state goals while retaining the core tenets.[7]

The Staff Proposal recommended adoption of the following ten proposed rate design principles:

i. All residential customers (including low-income and medical baseline) should have access to enough electricity to ensure their essential needs (health, safety, and full participation in society) are met at an affordable cost.

ii. Rates should be based on marginal cost. Rates should be based on marginal cost and should not have a negative Contribution to Margin.

iii. Rates should be based on cost-causation principles and avoid cost shifts.

[3] D.14-06-029 at 12. The Bonbright Principles include rate attributes such as fair apportionment of costs among customers, encouragement of efficient use of energy, rate stability, and ability to meet revenue requirement under the fair return standard. *(See* Bonbright, James C., Principles of Public Utility Rates, Columbia University Press, New York NY, 1961.)

[4] D.08-07-045 established rate design guidance for PG&E's dynamic rates.

[5] *See* D.19-10-055 at 10-12 and D.21-07-010 at 12-13.

[6] Order Instituting Rulemaking to Advance Demand Flexibility Through Electric Rates at 5 and 8.

[7] Staff Proposal at 2.

iv. Rates should encourage GHG emissions reduction, beneficial electrification, and cost-effective energy efficiency.

v. Rates should optimize use of existing grid infrastructure and limit long-term infrastructure costs.

vi. Customers should have options to manage their bills.

vii. Rates should be technology-neutral and avoid cross-subsidies, unless the cross-subsidies appropriately support explicit state policy goals.

viii. Rate incentives should be explicit and transparent.

ix. Rates should encourage customer behavior that improves system reliability.

x. Transitions to new rate structures should emphasize customer education and outreach that enhances customer understanding and acceptance of new rates and minimizes the bill impacts associated with such transitions.

We will discuss each proposed principle from the Staff Proposal below.[8] Each subsection below will first restate the original principle from the 2014 Rate Design Principles, and then will provide the proposed principle and staff rationale from the Staff Proposal. This will be followed by a discussion of party comments regarding the Staff Proposal principle, and finally the revised updated principle to be adopted by the Commission in this decision. A revised explanation of each adopted principle is included in Attachment A.

[8] This decision discusses each of the Electric Rate Design Principles in the order adopted in this decision rather than in the order of the original 2014 Rate Design Principles or the proposed principles in the Staff Proposal.

3.1. Electric Rate Design Principle 1

2014 Principle:[9] Low-income and medical baseline customers should have access to enough electricity to ensure basic needs (such as health and comfort) are met at an affordable cost.

Proposed Principle:[10] All residential customers (including low-income and medical baseline) should have access to enough electricity to ensure their essential needs (health, safety, and full participation in society) are met at an affordable cost.

Staff Rationale:[11] The Commission remains committed to ensuring that all customers have access to enough electricity to meet their essential needs at an affordable cost. Energy Division staff proposed to modify this principle to rely on the affordability metrics adopted in Rulemaking 18-07-006.[12]

Generally, parties supported the inclusion of all residential customers in this principle, with the continued emphasis on customers with low incomes and medical needs.[13] Several parties offered comments to refine this principle.

CforAT, Cal Advocates, and each of the IOUs argued that this principle should not refer solely to "medical baseline" customers since some customers on non-tiered rates receive a line-item medical discount instead of a medical

[9] All references to a "2014 Principle" in this decision refer to the 2014 Rate Design Principles.

[10] All references to a "Proposed Principle" in this decision refer to the Staff Proposal.

[11] All references to a "Staff Rationale" in this decision refer to the staff explanation of a proposed principle in the Staff Proposal.

[12] In D.22-08-023, the Commission adopted metrics for measuring the "affordability" of utility service, including "essential" levels of energy services.

[13] *See* opening comments on the Staff Proposal of CalCCA, Cal Advocates, CEJA, CEDMC, PG&E, Sierra Club, and SCE. No party objected to the inclusion of all residential customers in this principle.

baseline.[14] We agree that this language should be updated to include customers who receive medical discounts.

CforAT also commented that the principle should be revised to recognize that "health, safety and full participation in society" is not a full list of essential needs.[15] We agree and will remove the examples of essential needs from the principle since the list of essential needs may grow and evolve through other Commission decisions over time.

It is reasonable for the Commission to adopt the following updated Electric Rate Design Principle 1: All residential customers (including low-income customers and those who receive a medical baseline or discount) should have access to enough electricity to ensure that their essential needs are met at an affordable cost.

3.2. Electric Rate Design Principle 2

2014 Principle: Rates should be based on marginal cost.

Proposed Principle: Rates should be based on marginal cost and should not have a negative Contribution to Margin (CTM).

Staff Rationale: Designing rates based on marginal cost links the economic fundamentals of grid costs to rate design. Ensuring that rates do not have a negative CTM is one of the fundamental keys to minimizing revenue shortfall. Rates that create revenue shortfall can exacerbate distortions and inflationary trends in rates.

Several parties recommended including additional specificity regarding marginal cost-based ratemaking in this principle. NRDC commented that only

[14] *See* opening comments on the Staff Proposal of CforAT, Cal Advocates, PG&E, SCE, and SDG&E.

[15] CforAT's opening comments on the Staff Proposal.

volumetric consumption charges should be based on marginal cost[16] and SEIA argued that rates should only be based on long-run marginal cost.[17] The Joint Large Ratepayers objected to NRDC's proposed limitation, and the Joint Large Ratepayers, SDG&E, and TURN opposed SEIA's proposed limitation.[18]

The Commission continues to generally set rates based on marginal cost and has not limited our use of cost-based ratemaking to only the volumetric portion of the rate, nor have we limited our ability to consider the use of both short- and long-run marginal costs when appropriate. Accordingly, we will retain this concept without modification.

CEJA, CEDMC, and 350/Climate Center each argued that the marginal cost principle should include an exception for meeting certain state policy goals.[19] Rather than add a caveat to this principle, we will adopt a separate principle to address rate subsidies for addressing state policy goals.[20]

SDG&E suggested that we remove the CTM assessment method from this proposed principle. SDG&E argued that CTM is not an appropriate measurement for all rates, and it would be overly burdensome to calculate a CTM for all rates. SDG&E asserted that the CTM assessment method was first applied when the Commission adopted economic development rates to evaluate whether a discounted rate should be offered to retain load or attract new load without shifting costs to other ratepayers.[21] We agree that CTM is a method for

[16] NRDC's opening comments on the Staff Proposal.

[17] SEIA's opening comments on the Staff Proposal.

[18] Reply comments on the Staff Proposal of the Joint Large Ratepayers, SDG&E, and TURN.

[19] Opening comments on the Staff Proposal of CEJA, CEDMC, and 350/Climate Center.

[20] *See* Section 3.8 below.

[21] SDG&E's opening comments on the Staff Proposal.

measuring whether a specific rate unintentionally shifts costs to non-participating customers and should not be required for all rates. We will also address unintentional cost shifts in a separate principle below.

For these reasons, it is reasonable for the Commission to retain and affirm the existing Electric Rate Design Principle 2: Rates should be based on marginal cost.

3.3. Electric Rate Design Principle 3

2014 Principle: Rates should be based on cost-causation principles.

Proposed Principle: Rates should be based on cost-causation principles and avoid cost shifts.

Staff Rationale: The additional language clarifies the state policy that rates should avoid costs shifts.

Nearly all comments on this principle asserted that it was confusing or duplicative to have separate principles about "cost shifts" and "cross-subsidies" due to their understanding that these two terms refer to the same concept.[22] CESA suggested adding the word "unintended" before "cost shift" to clarify the difference between a cost shift and a cross-subsidy.[23]

We agree with the suggestion to add "unintended" before "cost shift" to differentiate the two concepts. We will also move the concept of unintended cost shifts to Electric Rate Design Principle 9, discussed in Section 3.9 below, so that the principles relating to cost shifts and cross-subsidies will be adjacent and more easily compared and considered together. In addition, we will change "cost

[22] *See* opening comments on the Staff Proposal of Cal Advocates, CESA, MRC, NRDC, Sierra Club, SEIA, SCE, SDG&E, and 350/Climate Center.

[23] CESA's opening comments on the Staff Proposal.

causation principles" to "cost causation" to clarify that this principle does not refer to an additional set of principles.

For these reasons, it is reasonable for the Commission to adopt Electric Rate Design Principle 3: Rates should be based on cost causation.

3.4. Electric Rate Design Principle 4

2014 Principle: Rates should encourage conservation and energy efficiency.

Proposed Principle: Rates should encourage GHG emissions reduction, beneficial electrification, and cost-effective energy efficiency.

Staff Rationale: For California to achieve its GHG emissions reduction goals at least cost, rates should discourage consumption during high cost or high GHG-emissions periods and should encourage consumption when the grid is supplied predominantly by renewable resources. Electric rates should encourage customers to transition away from fossil fuels and adopt electrified transportation and building technologies. Rates should also continue to provide appropriate incentives for cost-effective energy efficiency.

Most party comments on this principle supported the addition of GHG emissions reduction and electrification to the principle. A few parties opposed the removal of conservation from the principle. CEDMC argued that conservation remains important for reducing customer consumption, mitigating the need for incremental resource and infrastructure investments. 350/Climate Center asserted that conservation is essential for reducing both financial and environmental costs.[24]

[24] *See* opening comments on the Staff Proposal of Cal Advocates, CEJA, Joint Large Ratepayers, MRC, Sierra Club, PG&E, SCE, and SDG&E.

We recognize the continued importance of conserving energy during high cost and high-GHG emissions hours. However, the Commission's strategies for reducing GHG emissions have shifted from a focus on conserving electricity at all times to reducing usage during certain hours, and electrifying buildings and transportation rather than reducing overall electricity consumption. We also agree that the concept of energy efficiency is limited and does not capture the concept of conserving electricity during peak periods. Accordingly, we will replace the reference to "energy efficiency" with "economically efficient use of energy" to encourage conservation of energy during high-cost periods in addition to energy efficiency.

Several parties commented on whether this principle should require consideration of cost-effectiveness or cost efficiency. CEJA asserted that energy efficiency does not need to be "cost-effective" since it is often a customer-driven decision that does not require a cost-effectiveness evaluation by the Commission.[25] 350/Climate Center and SDG&E also objected to the inclusion of "cost-effective" in this principle.[26] SCE and the Joint Large Ratepayers argued that "cost-effective" should be added before electrification to avoid cost shifts to non-participating customers.[27]

We agree that referring to the specific evaluation metric of "cost-effectiveness" is not appropriate in a principle. We also agree with the parties who argued that the Commission must consider cost when designing rates to encourage GHG emissions reduction, electrification, and efficient use of

[25] CEJA's opening comments on the Staff Proposal.

[26] Opening comments on the Staff Proposal of 350/Climate Center and SDG&E.

[27] Opening comments on the Staff Proposal of SCE and the Joint Large Ratepayers.

energy. Accordingly, we will apply the concept of economic efficiency to all elements of this principle.

350/Climate Center recommended expanding the concept of GHG emissions to "harmful emissions" to include air pollution.[28] CEJA similarly commented that another rate design principle should address "air quality."[29] We acknowledge the air quality impact of generating electricity from fossil fuels and using fossil fuels for transportation and building end-uses. While we will not add this concept to the principle, we expect that designing rates to encourage GHG emissions reduction and electrification will also reduce other harmful emissions.

350/Climate Center and CEJA each recommended removing the modifier "beneficial" before "electrification" since the Staff Proposal did not provide any examples of electrification that is not beneficial.[30] We agree with this recommendation.

It is reasonable for the Commission to adopt the following as Electric Rate Design Principle 4: Rates should encourage economically efficient (i) use of energy, (ii) reduction of GHG emissions, and (iii) electrification.

3.5. Electric Rate Design Principle 5

2014 Principle: Rates should encourage economically efficient decision making.

Proposed Principle: Rates should encourage customer behavior that improves system reliability.

[28] 350/Climate Center's opening comments on the Staff Proposal.

[29] CEJA's opening comments on the Staff Proposal.

[30] Opening comments on Staff Proposal of CEJA and 350/Climate Center.

Staff Rationale: Several of the principles include the concept that rates should encourage economically efficient decision making. The proposed principle addresses the state policy priority of encouraging customer behaviors that improve system reliability.

Cal Advocates, the Joint Large Ratepayers, and SDG&E commented that the Commission should not remove "economically efficient decision making" from this principle.[31] PG&E suggested modifying the proposed principle by adding "in an economically efficient manner."[32] We agree with PG&E's suggestion.

CEJA and the Clean Coalition raised concerns that the concept of "system reliability" is too limited. CEJA suggested adding "local reliability" and the Clean Coalition suggested adding "local resilience."[33] We will revise this principle to refer to "electric system reliability" generally, which includes local reliability.

It is reasonable for the Commission to adopt the following as Electric Rate Design Principle 5: Rates should encourage customer behaviors that improve electric system reliability in an economically efficient manner.

3.6. Electric Rate Design Principle 6

2014 Principle: Rates should incentivize reduction of both coincident and non-coincident peak demand.

Proposed Principle: Rates should optimize use of existing grid infrastructure and limit long-term infrastructure costs.

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[31] Opening comments on Staff Proposal of Cal Advocates, the Joint Large Ratepayers, and SDG&E.

[32] PG&E's opening comments on the Staff Proposal.

[33] Opening comments on Staff Proposal of CEJA and the Clean Coalition.

Staff Rationale: The proposed principle is intended to ensure that rates promote containment of electric system costs. While reducing coincident and non-coincident peak demand can be a means for reducing some types of long-term infrastructure costs, a singular emphasis on reducing customer peak demand undercuts the cost-containment potential of demand flexibility. The proposed principle is more inclusive of all customer demand flexibility and load management strategies that can reduce the long-term costs of the electric system.

Parties who commented on this principle generally supported including the concepts of optimizing the use of existing electric grid infrastructure and limiting long-term electric system infrastructure costs in this principle.[34]

Sierra Club suggested that the Commission replace "infrastructure costs" with the more inclusive concept of "electric system costs."[35] We agree with this recommendation.

Several parties raised concerns about including "limit" in relation to long-term infrastructure costs. SDG&E proposed to delete the concept entirely, arguing that it does not make sense to design rates for the purpose of limiting long-term infrastructure costs and that it would not be feasible to measure the impact of rates on these costs.[36] CEDMC recommended "minimize" and Cal Advocates proposed "reduce" to convey the purpose of the proposed principle without undue restrictions on long-term infrastructure costs.[37] We agree that the word "reduce" is more appropriate than "limit."

[34] *See* opening comments on the Staff Proposal of Cal Advocates, CEJA, EDMC, MRC, SEIA, and Sierra Club.

[35] Sierra Club's opening comments on the Staff Proposal.

[36] SDG&E's opening comments on the Staff Proposal.

[37] *See* opening comments on the Staff Proposal of CEDMC and Cal Advocates.

CEJA and SDG&E each recommended clarifying the link between customer behavior, optimization of the use of existing grid infrastructure, and reduction of long-term infrastructure costs.[38] We agree and have revised the principle to show the relationship between these three concepts.

It is reasonable for the Commission to adopt the following as Electric Rate Design Principle 6: Rates should encourage customer behaviors that optimize the use of existing grid infrastructure to reduce long-term electric system costs.

3.7. Electric Rate Design Principle 7

2014 Principle: Rates should be stable and understandable and provide customer choice.

Proposed Principle: Customers should have options to manage their bills.

Staff Rationale: This principle has been updated to emphasize customer needs to manage their bills rather than requiring a menu of static rates.

Nearly all of the parties who commented on this principle opposed the removal of "understandable" from the principle.[39] TURN suggested the following language, "Customers should be able to understand their rates and have options to manage their bills."[40] We will adopt this suggestion, which addresses parties' concerns without preventing the Commission from adopting dynamic rates.

Cal Advocates and UCAN also argued that we should retain the concept that rates should be "stable" so customers can plan for and pay their bills.[41]

[38] Opening comments on the Staff Proposal of CEJA and SDG&E.

[39] *See* opening comments on the Staff Proposal of CforAT, SBUA, TURN, UCAN, and 350/Climate Center, among others.

[40] TURN's opening comments on the Staff Proposal.

[41] Opening comments on the Staff Proposal of Cal Advocates and UCAN.

However, dynamic rates may not be characterized as "stable" since these rates are designed to send varying price signals to encourage customers to modify their behavior. This principle emphasizes the need for customers to have options to manage bills to mitigate bill volatility rather than implying that all rates will be static.

In addition, the Staff Proposal had recommended retaining the following 2014 Rate Design Principle 8: Rate incentives should be explicit and transparent. PG&E commented that this principle is duplicative of the principle discussed in Section 3.8 below, which requires cross-subsidies to support explicit state policy goals. We agree that these principles are very similar. In the interest of streamlining the principles, we have added the concept that customers should be able to understand rate incentives to this principle and deleted the original principle 8.

It is reasonable for the Commission to adopt the following as Electric Rate Design Principle 7: Customers should be able to understand their rates and rate incentives and should have options to manage their bills.

3.8. Electric Rate Design Principle 8

2014 Principle: Rates should avoid cross-subsidies, unless the cross-subsidies appropriately support explicit state policy goals.

Proposed Principle: Rates should be technology-neutral and avoid cross-subsidies, unless the cross-subsidies appropriately support explicit state policy goals.

Staff Rationale: The Commission retains the option to approve certain rate cross-subsidies to promote its policy goals. The proposed principle clarifies that rates should be technology neutral to avoid unintended cost shifts.

Several parties commented to support the Staff Proposal's recommendation to retain the Commission's flexibility to approve cross-subsidies that appropriately support state policy goals.[42] PG&E recommended adding to this principle the concept that the cross-subsidies should be "transparent."[43] We agree and will include this concept.

NRDC and Sierra Club each recommended addressing the concept of technology neutrality in a different principle rather than combining it with the principle regarding cross-subsidies.[44] We agree that the two concepts should be separated for clarity and will remove the technology neutral language from this principle. We will address the concept of technology neutrality in Section 3.9 below.

It is reasonable for the Commission to adopt the following as Electric Rate Design Principle 8: Rates should avoid cross-subsidies that do not transparently and appropriately support explicit state policy goals.

3.9. Electric Rate Design Principle 9

As discussed above, we will consider an additional principle to capture the concepts of technology neutrality and unintended cost shifts.

Several parties supported the Staff Proposal recommendation to include a principle that requires rates to be technology neutral in opening comments on the Staff Proposal, including NRDC, CalCCA, SCE, and PG&E.[45] Cal Advocates also supported this language in reply comments, explaining that the Commission

[42] *See* opening comments on the Staff Proposal of CEJA, Sierra Club, and SEIA, among others.

[43] PG&E's opening comments on the Staff Proposal.

[44] Opening comments on the Staff Proposal of NRDC and Sierra Club.

[45] Opening comments on the Staff Proposal of NRDC, CalCCA, SCE, and PG&E.

should discourage technology-specific rates that shift costs to non-participants while providing a competitive advantage to specific technologies.

However, some parties objected to a requirement that rates must be technology neutral. CEJA argued that rates that support building electrification could be portrayed as violating this principle.[46] 350/Climate Center agreed that rate design should focus on performance rather than support for specific technologies, but raised the concern that the Commission has not approved a methodology to determine whether a rate is technology neutral.[47] SCE recommended replacing "technology neutral" with "technology-specific" to clarify that rates should not be designed in a way that gives a market advantage to any specific technology. We agree that the concept of a "technology neutral" rate may be confusing and that the phrase "technology-specific" more clearly conveys the purpose of this principle.

No party opposed the Staff Proposal recommendation to include a principle regarding avoiding unintended cost shifts. We will include this concept in this principle.

It is reasonable for the Commission to adopt the following as Electric Rate Design Principle 9: Rate design should not be technology-specific and should avoid creating unintended cost-shifts.

3.10. Electric Rate Design Principle 10

2014 Principle: Transitions to new rate structures should emphasize customer education and outreach that enhances customer understanding and

[46] CEJA's opening comments on the Staff Proposal.

[47] 350/Climate Center's opening comments on the Staff Proposal.

acceptance of new rates and minimizes and appropriately considers the bill impacts associated with such transitions.

Proposed Principle: Transitions to new rate structures should emphasize customer education and outreach that enhances customer understanding and acceptance of new rates and minimizes the bill impacts associated with such transitions.

Staff Rationale: There is no need to make substantive changes to this principle to reflect changes to the state's goals or policies.

Cal Advocates, SDG&E, and 350/Climate Center each opposed removal of the words "and appropriately considers" from this principle. Cal Advocates argued that appropriately considering bill impacts is important for avoiding rate shock for customers.[48] 350/Climate Center and SDG&E argued that removing this language could prevent the Commission from adopting a future rate that may have substantial benefits but may not minimize bill impacts for all customers.[49] We agree that transitions to new rates structures should minimize or appropriately consider the bill impacts associated with such transitions.

It is reasonable for the Commission to adopt the following as Electric Rate Design Principle 10: Transitions to new rate structures should (i) include customer education and outreach that enhances customer understanding and acceptance of new rates, and (ii) minimize or appropriately consider the bill impacts associated with such transitions.

[48] Opening comments on the Staff Proposal of Cal Advocates, SDG&E, and 350/Climate Center.

[49] Opening comments on the Staff Proposal of 350/Climate Center and SDG&E.

4. Demand Flexibility Design Principles

In June 2022, the Commission's Energy Division released a whitepaper (Demand Flexibility Whitepaper) proposing strategies for advancing demand flexibility through a universally accessible, dynamic, and economic signal.[50] The Demand Flexibility Whitepaper identified six strategies:

i. Provide universal access to the current electricity price through a statewide internet-based price portal that provides the current composite electricity price specific to each customer at any time.

ii. Introduce dynamic energy prices based on real-time wholesale energy costs that reflect the localized marginal cost of energy.

iii. Incorporate dynamic capacity prices based on real-time grid utilization.

iv. Offer bi-directional electricity prices that allow customers to import and export energy based on the same dynamic, composite prices.

v. Offer a subscription option based on customer-specific load shapes.

vi. Enable transactive features that allow customers to lock in electricity prices to import or export a pre-determined quantity of energy at some future time.

In December 2021, the California Energy Commission's staff proposed revisions to its Load Management Standards in Docket 21-OIR-03. The proposed amendments would create the following requirements for the five largest electric utilities in California and the community choice aggregators located within their boundaries: (i) develop retail electric rates that change at least hourly to reflect

[50] The Demand Flexibility Whitepaper is available at: https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/electric-costs/demand-response-dr/demand-response-workshops/advanced-der-and-demand-flexibility-management-workshop.

locational marginal costs; (ii) update the time dependent rates in the California Energy Commission's Market Informed Demand Automation Server database; (iii) implement a single statewide standard method for providing automation service providers with access to customers' rate information; and (iv) educate and enable customers to participate in load management through participation in hourly rates or load flexibility programs based on hourly rates. On January 25, 2023, the Office of Administrative Law approved the California Energy Commission's revisions to the Load Management Standards.

The Staff Proposal presented the Energy Division's recommendations for Demand Flexibility Design Principles to guide the development of demand flexibility tariffs, systems, processes, and customer experiences of the IOUs. The Staff Proposal recommended adopting the proposed principles to support customer access to demand flexibility price signals and enable third parties to develop standardized solutions to manage customer demand. The Staff Proposal based the proposed principles on the guiding objectives and strategies included in the Demand Flexibility Whitepaper.

The Staff Proposal included the following proposed Demand Flexibility Design Principles.

i. Demand flexibility tariffs should provide a dynamic price signal that can be easily integrated into standardized third-party distributed energy resource (DER) and demand management solutions.

ii. Demand flexibility tariffs should provide a dynamic price signal that can be easily integrated into standardized third-party DER and demand management solutions.

iii. The systems and processes needed to calculate the dynamic price signal should be able to integrate

bundled and unbundled rate components so that all load serving entities can elect to participate.

iv. Demand flexibility tariffs should be designed in accordance with all of the Commission's electric rate design principles.

v. Customers should have access to tools and mechanisms (such as load shape subscriptions, forward transactions, bill protection, *etc.*) that may enable them to plan and schedule their energy use while managing the monthly variability of their bills.

vi. Demand flexibility tariffs should provide accurate cost-based compensation for exports that supports customer investments in electrification technologies and DERs.

Nearly all of the parties who commented on the Demand Flexibility Design Principles generally supported the proposed principles subject to modifications. The parties who expressed general support for the proposed principles, subject to their proposed modifications, include CforAT, Cal Advocates, CalCCA, CEDM, CEJA, CESA, Clean Coalition, NRDC, PG&E, SBUA, SCE, SEIA, Sierra Club, UCAN, and 350/Climate Center.[51] Only the Joint Large Ratepayers and SDG&E generally opposed adoption of the proposed principles, arguing that it is too soon to adopt principles to guide the design of demand flexibility tariffs, systems, processes, and customer experiences.[52]

The Commission frequently adopts principles that reflect party input prior to approving rates or major investments in systems, processes, and customer

[51] Opening comments on the Staff Proposal of CforAT, Cal Advocates, CalCCA, CEDM, CEJA, CESA, Clean Coalition, NRDC, PG&E, SBUA, SCE, SEIA, Sierra Club, UCAN, and 350/Climate Center.

[52] Opening comments on the Staff Proposal of Joint Large Ratepayers and SDG&E.

experiences. It is appropriate to consider Demand Flexibility Design Principles at this stage in the proceeding. We will now discuss each proposed principle below.

4.1. Demand Flexibility Design Principle 1

Proposed Principle: Demand flexibility tariffs should be designed in accordance with all Commission electric rate design principles.

Staff Rationale: All of the Electric Rate Design Principles should apply to demand flexibility tariffs as well.

Cal Advocates strongly supported this principle to clarify that the Electric Rate Design Principles should be applied together with this set of principles.[53] SDG&E opposed this principle, arguing that it is not clear which set of principles take priority.[54] No other party commented on this principle.

We agree with Cal Advocates that this principle is necessary to make it clear that all of the Electric Rate Design Principles will apply to demand flexibility rates. We will list this principle before all other Demand Flexibility Design Principles to emphasize this point. We also clarify that the Electric Rate Design Principles should be followed in the event of any perceived conflict between the two sets of principles.

It is reasonable for the Commission to adopt the following as Demand Flexibility Design Principle 1: Demand flexibility tariffs should be designed in accordance with all of the Commission's Electric Rate Design Principles.

4.2. Demand Flexibility Design Principle 2

Proposed Principle: Demand flexibility tariffs should provide a dynamic price signal that can be easily integrated into standardized third-party DER and demand management solutions.

[53] Cal Advocates' opening comments on the Staff Proposal.

[54] SDG&E's opening comments on the Staff Proposal.

Staff Rationale: One of the challenges for third-party demand management service providers and DER manufacturers is that it is not easy to integrate customer specific prices or rates into their solutions. A dynamic price signal should enable third parties to easily create standardized solutions (*e.g.*, algorithms, demand management services) for demand flexibility.

SCE suggested removing "easily" from the principle.[55] We agree that the adjective "easily" is subjective and is not necessary to include in this principle.

Cal Advocates recommended explicitly referencing the California Energy Commission's Load Management Standards since the recently updated standards are highly aligned with this principle.[56] Rather than referring to this specific policy, we will clarify that the dynamic price signal must be provided "in a standardized format" to achieve alignment with the California Energy Commission's updated Load Management Standards.

SDG&E opposed this principle, arguing that it is unclear how a utility would design a rate that meets this requirement.[57] SEIA replied that the objective of this principle is not to create a specific rate to fit third-party solutions.[58] Our clarification that dynamic price signals should be provided "in a standardized format" also clarifies how these price signals can be integrated into third-party solutions.

It is reasonable for the Commission to adopt the following as Demand Flexibility Design Principle 2: Demand flexibility tariffs should provide a

[55] SCE's opening comments on the Staff Proposal.

[56] Cal Advocates' opening comments on the Staff Proposal.

[57] SDG&E's opening comments on the Staff Proposal.

[58] SEIA's reply comments on the Staff Proposal.

dynamic price signal in a standardized format that can be integrated into third-party DER and demand management solutions.

4.3. Demand Flexibility Design Principle 3

Proposed Principle: Dynamic prices should accurately integrate the value of energy, generation capacity, distribution capacity, and transmission capacity (to the extent feasible) based on real-time grid conditions.

Staff Rationale: As California continues its transition to a predominantly renewable grid, it is important to ensure that the growing number of DERs and flexible loads are incentivized to operate in a manner that can reduce GHG emissions while improving system reliability and the efficiency of grid infrastructure use. The dynamic price signal should accurately incorporate the utility's energy cost and infrastructure cost to reliably serve incremental load at a given time as well as real-time grid constraints.

SCE and SEIA each recommended specifying that dynamic prices should integrate "marginal costs" instead of "value." SCE argued that "value" is too general to provide sufficient guidance. SEIA asserted that rates generally express the value of these system elements by being based on marginal costs. We agree since clarifying that dynamic prices should be based on marginal costs is consistent with our Electric Rate Design Principles.[59]

Cal Advocates, CESA, PG&E, SDG&E, Sierra Club, and Weave Grid each recommended removal of "real-time" since real-time grid conditions could be interpreted to refer to specific California Independent System Operator (CAISO) wholesale market prices or prevent use of forecasted grid conditions to set

[59] Opening comments on the Staff Proposal of SCE and SEIA.

prices.[60] We agree that the Commission should retain flexibility to consider different approaches to incorporating current or forecasted grid conditions.

Joint Large Ratepayers, Sierra Club, SDG&E, and Weave Grid recommended removal of references to "distribution capacity" or "transmission capacity" based on concerns about the potential challenges and complexity involved in including these components.[61] Cal Advocates and MRC recommended removal of references to all components of grid conditions.[62] The proposed principle includes the words "to the extent feasible" to provide the Commission with discretion to determine whether and how various marginal cost components may be included in dynamic prices over time. We will clarify that the language "to the extent feasible" applies to all categories of marginal costs.

It is reasonable for the Commission to adopt the following as Demand Flexibility Design Principle 3: Dynamic prices should, to the extent feasible, accurately incorporate the marginal costs of energy, generation capacity, distribution capacity, and transmission capacity based on grid conditions.

4.4. Demand Flexibility Design Principle 4

Proposed Principle: The systems and processes needed to calculate the dynamic price signal should be able to integrate bundled and unbundled rate components so that all load serving entities can elect to participate.

[60] Opening comments on the Staff Proposal of Cal Advocates, CESA, PG&E, SDG&E, and Sierra Club and Weave Grid's reply comments on the Staff Proposal.

[61] *See* opening comments on the Staff Proposal of Joint Large Ratepayers, Sierra Club, and SDG&E and Weave Grid's reply comments on the Staff Proposal.

[62] Cal Advocates' opening comments on the Staff Proposal and MRC's reply comments on the Staff Proposal.

Staff Rationale: Unbundled customers represent a growing share of California ratepayers. The systems and processes for calculating dynamic prices should be able, if necessary, to integrate specific generation rates for Community Choice Aggregation (CCA) and Direct Access customers into the dynamic price signal for unbundled customers.

Cal Advocates and SCE each expressed concerns that the proposed principle could be interpreted to require integration of bundled and unbundled rates into a single price signal.[63] SCE recommended the replacing "integrate" with "include" to allow for including unbundled rates without combining those rates with bundled rates.[64] SDG&E supported SCE's recommendation in reply comments. We agree that SCE's proposed revision would clarify the purpose of this principle.

CalCCA proposed to specify that the systems and processes necessary for CCAs to participate in demand flexibility and dynamic pricing include (i) CCA access to data from IOUs for the timely receipt of billing quality interval data to view CCA load, and (ii) upgrades to IOU systems to incorporate billing and settlement of the dynamic rates for CCA customers.[65] Cal Advocates and PG&E responded by pointing out that the scoping memo for this proceeding anticipates for a working group to develop a proposal to address this issue.[66] We agree that the question of which systems and processes are needed to enable unbundled customers to participate in demand flexibility and dynamic pricing will be

[63] Opening comments on the Staff Proposal of SCE and Cal Advocates.

[64] SCE's opening comments on the Staff Proposal.

[65] CalCCA's opening comments on the Staff Proposal.

[66] Reply comments on the Staff Proposal of Cal Advocates and PG&E.

addressed through the working group proposal process described in the scoping memo.

It is reasonable for the Commission to adopt the following as Demand Flexibility Design Principle 4: The systems and processes for calculating dynamic price signals should be able to include bundled and unbundled rate components so that any load serving entity can elect to participate.

4.5. Demand Flexibility Design Principle 5

Proposed Principle: Customers should have access to tools and mechanisms (such as load shape subscriptions, forward transactions, bill protection, *etc.*) that enable them to plan and schedule their energy use while managing the monthly variability of their bills.

Staff Rationale: Even under static rates, customer bills can vary significantly from month to month. Dynamic prices can, in some cases, increase the monthly variability in customer bills. Customers should have access to a suite of bill management tools that allow them to plan and schedule their energy use and reduce their monthly bill variability (*e.g.*, customer load shape subscriptions, forward transactions, and monthly or annual bill protections).

Cal Advocates, CEJA, Joint Large Ratepayers, PG&E, SCE, Sierra Club, and SDG&E recommended removing some or all of the examples of tools and mechanisms. These parties objected to the Commission deciding which tools and mechanisms are appropriate at this early stage in the proceeding.[67] We agree and will remove the examples from the principle.

CEJA expressed concerns that while the principle "reflects important values of customer empowerment," the principle does not recognize that some

[67] Opening comments on the Staff Proposal of Cal Advocates, CEJA, Joint Large Ratepayers, PG&E, SCE, Sierra Club, and SDG&E.

customers are less likely to have access to these tools or cannot schedule their energy use. CEJA recommended adding a sentence to emphasize that, for customers who do not have access to these tools, or ability to schedule energy use, variable pricing implicates equity concerns.[68]

CforAT similarly raised challenges for certain customers to plan and schedule their energy use, ranging from difficulty obtaining in-language and understandable information about the tools, the cost of mechanisms that could help customers change their usage patterns, lack of broadband service, and customers who cannot change their usage patterns.[69]

We acknowledge these concerns and will include these concerns in the description of this principle in Attachment A. We will also emphasize in the principle that low-income customers and those who receive a medical baseline or discount should have access to tools and mechanisms for planning and scheduling energy use. As we implement these principles, we will continue to consider customer barriers to planning and managing their energy use and how to overcome these barriers.

It is reasonable for the Commission to adopt the following as Demand Flexibility Design Principle 5: Customers (including low-income customers and those who receive a medical baseline or discount) should have access to tools and mechanisms that enable them to plan and schedule their energy use while managing the monthly variability of their bills.

[68] CEJA's opening comments on the Staff Proposal.

[69] CforAT's opening comments on the Staff Proposal.

4.6. Demand Flexibility Design Principle 6

Proposed Principle: Demand flexibility tariffs should provide accurate cost-based compensation for exports that supports customer investments in electrification technologies and DERs.

Staff Rationale: Customer exports should be compensated commensurate to the real-time value that those exports provide the grid. This will create a stable pathway for customers to adopt export-capable DERs and electrification technologies (*e.g.,* bidirectional electric vehicle chargers) without creating cost-shifts for other customers.

PG&E and SEIA proposed to replace "cost-based compensation" with "marginal cost-based compensation" to clarify which costs will be included in export rates.[70] We agree since this language is consistent with the Electric Rate Design Principles.

SDG&E and the Joint Large Ratepayers raised concerns that the proposed principle could be misinterpreted to suggest that export compensation should provide rate incentives for electrification technologies and DERs. The Joint Large Ratepayers suggested revising the principle to refer to "cost-effective exports from customer-sited electrification technologies and DERs."[71] We agree that the principle should be clarified by referring to "economically efficient grid integration of customer-sited electrification technologies and distributed energy resources" to prevent this misinterpretation.

It is reasonable for the Commission to adopt the following as Demand Flexibility Design Principle 6: Demand flexibility tariffs should provide marginal

[70] Opening comments on the Staff Proposal of PG&E and SEIA.

[71] Opening comments on the Staff Proposal of SDG&E and Joint Large Ratepayers.

cost-based compensation for exports to enable economically efficient grid integration of customer-sited electrification technologies and distributed energy resources.

5. Summary of Public Comment

Rule 1.18 of the Commission's Rules of Practice and Procedure (Rules) allows any member of the public to submit written comment in any Commission proceeding using the "Public Comment" tab of the online Docket Card for that proceeding on the Commission's website. Rule 1.18(b) requires that relevant written comment submitted in a proceeding be summarized in the final decision issued in that proceeding.

There are no public comments relevant to the issues in this decision on the Docket Card of this proceeding.

6. Comments on Proposed Decision

The proposed decision of ALJ Stephanie Wang in this matter was mailed to the parties in accordance with Section 311 of the Public Utilities Code and comments were allowed under Rule 14.3. Comments were filed on _____, and reply comments were filed on _____ by _____.

7. Assignment of Proceeding

President Alice Reynolds is the assigned Commissioner and Stephanie Wang is the assigned ALJ in this proceeding.

Findings of Fact

1. The Commission most recently updated the principles for designing electric rates for the IOUs in 2014.
2. The 2014 Rate Design Principles require updates to align the principles with current state goals.

3. Demand Flexibility Design Principles are needed to guide the development of demand flexibility tariffs, systems, processes, and customer experiences of the large IOUs.

Conclusions of Law

1. It is reasonable to adopt the Electric Rate Design Principles in Ordering Paragraph 1 for the assessment of all rates of the large IOUs.

2. It is reasonable to adopt the Demand Flexibility Design Principles in Ordering Paragraph 2 to guide the development of demand flexibility tariffs, systems, processes, and customer experiences of the large IOUs.

3. The Electric Rate Design Principles should be followed in the event of any perceived conflict between the Electric Rate Design Principles and the Demand Flexibility Design Principles.

O R D E R

IT IS ORDERED that:

1. This decision adopts the following Electric Rate Design Principles for the assessment of all electric rates of Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company.

(a) All residential customers (including low-income customers and those who receive a medical baseline or discount) should have access to enough electricity to ensure that their essential needs are met at an affordable cost.

(b) Rates should be based on marginal cost.

(c) Rates should be based on cost causation.

(d) Rates should encourage economically efficient (i) use of energy, (ii) reduction of greenhouse gas emissions, and (iii) electrification.

(e) Rates should encourage customer behaviors that improve electric system reliability in an economically efficient manner.

(f) Rates should encourage customer behaviors that optimize the use of existing grid infrastructure to reduce long-term electric system costs.

(g) Customers should be able to understand their rates and rate incentives and should have options to manage their bills.

(h) Rates should avoid cross-subsidies that do not transparently and appropriately support explicit state policy goals.

(i) Rate design should not be technology-specific and should avoid creating unintended cost-shifts.

(j) Transitions to new rate structures should (i) include customer education and outreach that enhances customer understanding and acceptance of new rates, and (ii) minimize or appropriately consider the bill impacts associated with such transitions.

2. This decision adopts the following Demand Flexibility Design Principles to guide the development of demand flexibility tariffs, systems, processes, and customer experiences of Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company.

(a) Demand flexibility tariffs should be designed in accordance with all of the Commission's Electric Rate Design Principles.

(b) Demand flexibility tariffs should provide a dynamic price signal in a standardized format that can be integrated into third-party distributed energy resource and demand management solutions.

(c) Dynamic prices should, to the extent feasible, accurately incorporate the marginal costs of energy, generation capacity, distribution capacity, and transmission capacity based on grid conditions.

(d) The systems and processes for calculating dynamic price signals should be able to include bundled and unbundled rate components so that any load serving entity can elect to participate.

(e) Customers (including low-income customers and those who receive a medical baseline or discount) should have access to tools and mechanisms that enable them to plan and schedule their energy use while managing the monthly variability of their bills.

(f) Demand flexibility tariffs should provide marginal cost-based compensation for exports to enable economically efficient grid integration of customer-sited electrification technologies and distributed energy resources.

3. Rulemaking 22-07-005 remains open.

This order is effective today.

Dated _____, at San Francisco, California.

ATTACHMENT A

ATTACHMENT A

A. Electric Rate Design Principles and Explanation

i. All residential customers (including low-income customers and those who receive a medical baseline or discount) should have access to enough electricity to ensure that their essential needs are met at an affordable cost.

This principle refers to "affordable cost" and "essential needs" in alignment with D.22-08-023, which adopted metrics for measuring the "affordability" of utility service, including "essential" levels of energy services.

ii. Rates should be based on marginal cost.

A utility's marginal cost is the cost of providing electric service for an incremental unit of load or a new customer. The Commission defines a utility's marginal costs in General Rate Case proceedings, which include the marginal costs for energy, generation capacity, distribution capacity, transmission capacity, and customer access. This principle allows for consideration of both long-run and short-run marginal costs in ratemaking. For example, long run marginal generation capacity cost is based on the cost to construct and operate the cheapest new power plant, where short-run marginal generation capacity cost is the cost to continue to operate the most expensive existing power plant.

iii. Rates should be based on cost causation.

This principle affirms that a customer, or a customer class, that causes a cost to be incurred by receiving service should pay for the cost of service. The purpose of this principle is to fairly apportion utility costs to customers and to encourage economically efficient decision making by customers for consumption and investments in electrification technologies and DERs.

iv. Rates should encourage economically efficient (i) use of energy, (ii) reduction of GHG emissions, and (iii) electrification.

This principle reflects several of the state's current policy priorities, including reduction of GHG emissions by shifting consumption of electricity to time periods when the grid is supplied predominantly by GHG-free resources and electrification of transportation and buildings to reduce GHG emissions. Economically efficient use of energy includes both energy efficiency and conservation of energy during periods when electricity has the highest costs.

v. Rates should encourage customer behaviors that improve electric system reliability in an economically efficient manner.

It is important for rates to encourage customer behavior that improves electric system reliability, which may include local reliability. For example, time-variant rates can be designed to have prices that encourage customers to reduce or shift their usage during critical hours for reliability. These rates should be economically efficient and avoid unintended cost shifts.

vi. Rates should encourage customer behaviors that optimize the use of existing grid infrastructure to reduce long-term electric system costs.

Rates can influence customer behaviors in several ways to reduce electric system costs. For example, reduction of coincident peak demand can reduce the need to invest in certain infrastructure upgrade costs. Increasing demand during hours when the grid is supplied by high levels of renewable energy can reduce both curtailment of renewable energy and the need for investments in additional generation capacity.

vii. Customers should be able to understand their rates and rate incentives and should have options to manage their bills.

Customers should be able to understand their rates and rate incentives so they can plan for their bills and manage their behavior to reduce their bills. For example, customer understanding of time-periods for time-of-use rates and differences between peak and off-peak electricity prices is essential to ensure that customers understand the bill impacts of their usage behavior. Customers should have rate options to help them match their needs and reduce the month-to-month variability of their bills.

viii. Rates should avoid cross-subsidies that do not transparently and appropriately support explicit state policy goals.

Cross-subsidies are intentional deviations from cost-based ratemaking principles to achieve specific state policy goals. For example, the California Alternate Rates for Energy (CARE) discount program is a low-income cross-subsidy funded by non-CARE customers to meet statutory requirements.

ix. Rate design should not be technology-specific and should avoid creating unintended cost-shifts.

Rates should not be tailored to benefit a specific customer-sited technology. Certain technologies, however, have the potential to provide greater customer benefits by changing customer usage or exports in response to rate signals. When rates properly reflect marginal costs and are based on cost-causation, customers that leverage technologies to respond to rates can and should benefit. Customer benefits should be commensurate to the value that the customer response provides to the grid, regardless of type of customer-sited technology.

Cost-shifts are unintended deviations from cost causation principles. Cost shifts result in some customers paying for the costs of service of other customers.

Cost-shifts can lead to increased electric system costs and further undermine equity by increasing electricity bills for low-income customers.

x. Transitions to new rate structures should (i) include customer education and outreach that enhances customer understanding and acceptance of new rates, and (ii) minimize or appropriately consider the bill impacts associated with such transitions.

Transitions to new rate structures should include effective customer education and outreach. The Commission should seek to minimize the impacts of rate transitions on customer bills and should also consider the impact of rate transitions on other factors, such as equity, long-term system costs, and state policy goals.

B. Demand Flexibility Design Principles and Explanation

xi. Demand flexibility tariffs should be designed in accordance with all of the Commission's Electric Rate Design Principles.

The Demand Flexibility Design Principles were developed to align with the Electric Rate Design Principles. In the event of a perceived conflict between the Demand Flexibility Design Principles and the Electric Rate Design Principles, the Electric Rate Design Principles should be followed.

xii. Demand flexibility tariffs should provide a dynamic price signal in a standardized format that can be integrated into third-party DER resource and demand management solutions.

Solutions by third-party providers are necessary to support widespread customer adoption of dynamic rates. Third-party providers need access to customer-specific prices and rates to help customers respond to dynamic rates. Dynamic price signals should be provided in a standardized format so that these

signals can be integrated into third-party DER and demand management solutions.

xiii. Dynamic prices should, to the extent feasible, accurately incorporate the marginal costs of energy, generation capacity, distribution capacity, and transmission capacity based on grid conditions.

As California continues its transition to a predominantly renewable grid, it is important to ensure that the growing number of DERs and flexible loads are incentivized to operate in a manner that can reduce GHG emissions while improving system reliability and the efficiency of grid infrastructure use. Dynamic prices should incorporate all marginal costs of providing electricity to customers based on current or forecasted grid conditions. The Commission may determine whether and how it is feasible and appropriate to incorporate the various elements of the marginal costs of electric service.

xiv. The systems and processes for calculating dynamic price signals should be able to include bundled and unbundled rate components so that any load serving entity can elect to participate.

Unbundled customers, including CCA and Direct Access customers, represent a growing share of California ratepayers. The systems and processes for calculating dynamic prices must be able to include generation rates for unbundled customers to enable widespread adoption of dynamic rates.

xv. Customers (including low-income customers and those who receive a medical baseline or discount) should have access to tools and mechanisms that enable them to plan and schedule their energy use while managing the monthly variability of their bills.

Even under static rates, customer bills can vary significantly from month to month. Dynamic prices can, in some cases, increase the monthly variability in customer bills. Customers should have access to a suite of load and bill

management tools and mechanisms that allow them to plan and schedule their energy use and reduce their monthly bill variability while still responding to a dynamic price signal. The Commission may consider bill management tools such as customer load shape subscriptions, forward transactions, or bill protection.

Some customers are less likely to have access to load management tools or the ability to schedule their energy use. Customer barriers may include difficulty obtaining in-language and understandable information about the tools, the cost of load management mechanisms that could help customers change their usage patterns, lack of broadband service, and lack of ability to change their energy usage patterns. This principle acknowledges those barriers.

xvi. Demand flexibility tariffs should provide marginal cost-based compensation for exports to enable economically efficient grid integration of customer-sited electrification technologies and DERs.

Customer exports to the grid should be compensated commensurate to the marginal cost-based value those exports provide to the grid. This will create a stable pathway for customers to adopt export-capable DERs and electrification technologies, such as bidirectional electric vehicle chargers, without creating unintended cost-shifts for other customers.

(END OF ATTACHMENT A)