

Docket No.: R.22-11-013
Exhibit No.: PCF-01
ALJ: Elaine Lau
Witness: Bill Powers

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

Order Instituting Rulemaking to Consider Distributed
Energy Resource Program Cost-Effectiveness Issues,
Data Access and Use, and Equipment Performance
Standards.

Rulemaking 22-11-013
(Filed November 17, 2022)

**REBUTTAL TESTIMONY OF BILL POWERS, P.E. ON BEHALF OF
THE PROTECT OUR COMMUNITIES FOUNDATION**

NOVEMBER 20, 2023

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I. INTRODUCTION

Q. Please state your name and professional affiliation.

A. My name is Bill Powers. I am a professional engineer with Powers Engineering. My business address is 4452 Park Blvd., Ste. 209, San Diego, California 92116.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of The Protect Our Communities Foundation (PCF).

Q. Do you certify under penalty of perjury, that, to the best of your knowledge, the testimony you will give in this proceeding is true and correct?

A. Yes.

Q. Have you reviewed the direct testimony in this proceeding?

A. Yes.

Q. Please summarize your arguments in this rebuttal testimony.

A. First, I explain why the California Public Utilities Commission (the Commission) should reject the Utilities' recommendation to remove societal cost tests from the avoided cost calculator. Next, I identify the problem that arises when the utilities inaccurately report which projects are used for system-wide need: unrealistic and artificially low avoided transmission costs. Next, I argue that the avoided transmission study should be completed as soon as possible, and that it is unacceptable to use inaccurate values in the 2024 ACC. I then show that the Utilities incorrectly conclude that DERs do not lead to cost savings. Finally, I offer support for Google LLC's concerns in their testimony that the methods used to calculate the avoided costs in the ACC can result in "enormous swings in cost-effectiveness."

II. THE COMMISSION SHOULD REJECT THE UTILITIES' RECOMMENDATION TO REMOVE SOCIETAL COSTS FROM THE AVOIDED COST CALCULATOR.

Q. What do the Utilities recommend in their opening testimony with respect to societal cost?

A. The testimony by PG&E, SDG&E, and SCE (collectively, the Utilities) recommend that the “Avoided Costs in the ACC should be clearly linked to IOU revenue requirements and customer bills, not broader societal or non-energy benefits.”¹ The Utilities further recommend that “Non-Energy Benefits (NEB), or non-energy impacts (NEI) should be applied as “informational only” and not used to drive program decisions.”² The Commission should reject the Utilities’ recommendations.

Q. Why should the Commission reject the Utilities’ recommendation to eliminate societal costs from the ACC?

A. As established by the Prepared Direct Testimony of Roger Lin on Behalf of The Center for Biological Diversity, Public Utilities Code section 701.1 “requires the Commission to consider NEBs and social costs in the ACC process.”³ As Mr. Lin testifies, some examples of NEBs include “improved health, safety, and comfort to individuals” as well as broader societal benefits such as “local job creation, increased community resilience, improved air quality and other environmental benefits.”⁴ Social costs refer to the costs to society as a whole when these broader societal NEBs are not considered.⁵

The Commission has long acknowledged the importance of social costs and NEBs,⁶ beginning with the California Standard Practice Manual: Economic Analysis of Demand-Side

¹ R.22-11-013, Pacific Gas And Electric Company (U 39-M), San Diego Gas & Electric Company (U 902-M), And Southern California Edison Company (U 338-E) Opening Testimony In Response To Administrative Law Judge’s Ruling Issuing The 2024 Avoided Cost Calculator Staff Proposal For Party Input (October 30, 2023), p. 42.

² *Id.* at p. 49.

³ R.22-11-013, Prepared Direct Testimony of Roger Lin on Behalf of The Center for Biological Diversity (October 30, 2023), p. 3-4 (citing Section 701.1 which requires resource planning and investment to “minimize the cost to society” and to “improve the environment.”).

⁴ *Ibid.*

⁵ *Ibid.*

⁶ *Id.* at p. 4

Programs and Projects (SPM) in 2001, continuing with implementing the mandates of SB 350, and persisting as part of the recommendations of the Commission’s ESJ Action Plans.⁷ Social costs and NEBs can be evaluated using the Societal Cost Test (SCT) variation of the Total Resource Cost (TRC) test.⁸ The TRC “measures the net costs of a demand-side management program as a resource option based on the total costs of the program, including both the participants’ and the utility’s costs.”⁹ Unlike the TRC, the SCT “includes the effects of externalities (e.g., environmental, national security), excludes tax credit benefits, and uses a different (societal) discount rate.”¹⁰ As described in the SPM, the TRC is the only SPM methodology capable of “capturing total benefits (avoided supply costs plus, in the case of the societal test variation, externalities)” of a program.¹¹

Additionally, the Commission in D.19-05-019 has already rejected the Utilities’ recommendation to avoid considering societal and NEBs. D.19-05-019 directs the Utilities to use the TRC test as “the primary test for evaluating the cost-effectiveness of distributed energy resources.”¹² Although the Utilities argue that the TRC “is still the most valuable analysis since it looks at discreet, quantifiable costs vs. benefits,”¹³ other aspects of their testimony contradict the intent of the Commission in deciding D.19-05-019. These include the Utilities’ statements that “Avoided Costs in the ACC should be clearly linked to IOU revenue requirements and customer bills, not broader societal or non-energy benefits.”¹⁴ And that “Non-Energy Benefits (NEB), or non-energy impacts (NEI) should be applied as “informational only” and not used to drive program decisions.”¹⁵

⁷ *Id.* at p. 4-5.

⁸ CPUC, California Standard Practice Manual: Economic Analysis of Demand-Side Programs and Projects (October 2001), p. 18, available at https://www.cpuc.ca.gov/-/media/cpuc-website/files/uploadedfiles/cpuc_public_website/content/utilities_and_industries/energy_-_electricity_and_natural_gas/cpuc-standard-practice-manual.pdf.

⁹ *Ibid.*

¹⁰ *Ibid.*

¹¹ *Id.* at p. 21.

¹² D.19-05-019, Decision Adopting Cost-Effectiveness Analysis Framework Policies for All Distributed Energy Resources, Conclusions of Law 2, p. 63.

¹³ R.22-11-013, Pacific Gas And Electric Company (U 39-M), San Diego Gas & Electric Company (U 902-M), And Southern California Edison Company (U 338-E) Opening Testimony In Response To Administrative Law Judge’s Ruling Issuing The 2024 Avoided Cost Calculator Staff Proposal For Party Input (October 30, 2023), p. 57.

¹⁴ *Id.* at p. 42.

¹⁵ *Id.* at p. 49.

The SCT variation of the TRC is especially important when discussing equity issues, because, as Mr. Lin highlights, “consideration of social costs and NEBs is critical to eliminating barriers to clean energy resources in disadvantaged communities (“DACs”), tribal, low-income and other Environmental and Social Justice (“ESJ”) communities in order to meet our 100% clean energy target.”¹⁶ The SB 350 Barriers Study recommended that the Commission “Establish common definitions of non-energy benefits, develop standards to measure them, and attempt to determine consistent values for use in all energy programs.”¹⁷ PCF agrees with Mr. Lin that NEBs, including avoided fuel price uncertainty, avoided water use and pollution, local economic development, avoided land use impacts, resiliency benefits, and air quality benefits, should be addressed in the ACC.¹⁸ We also agree with CBD that the Commission should defer the calculation of these NEBs to the California Energy Commission (CEC), as the CEC has already begun to calculate these values, while the Commission has lagged behind.¹⁹ In conclusion, these suggested NEBs are real, concrete benefits that can be monetized and must be included in the ACC to enable an apples-to-apples avoided cost comparison between the Distributed Energy Resources (DER) alternative and a conventional transmission and distribution default solution.

III. UNREALISTIC AND ARTIFICIALLY LOW AVOIDED TRANSMISSION COSTS RESULT FROM THE UTILITIES’ INACCURATE SELF-REPORTING ABOUT WHICH PROJECTS ARE USED FOR SYSTEM-WIDE NEED.

Q. Please describe how unrealistic and artificially low avoided transmission costs result when the utilities inaccurately report which projects are used for system-wide need.

A. One of the problems with characterizing only some projects as system-wide is that it results in inaccurate avoided transmission costs within the ACC. As explained in the Prepared Direct Testimony of R. Thomas Beach on behalf of the Solar Energy Industries Association, “the

¹⁶ R.22-11-013, Prepared Direct Testimony of Roger Lin on Behalf of the Center for Biological Diversity (October 20, 2023) p. 4.

¹⁷ CEC, SB 350 Low-Income Barriers Study, Part A (December 2016), p. 5, available at https://assets.ctfassets.net/ntcn17ss1ow9/3SqKkJoNIvts2nYVPAOmGH/fe590149c3e39e51593231dc60e0eeff/TN214830_20161215T184655_SB_350_LowIncome_Barriers_Study_Part_A_Commission_Final_Report.pdf.

¹⁸ R.22-11-013, Prepared Direct Testimony of Roger Lin on Behalf of the Center for Biological Diversity (October 20, 2023), p. 6.

¹⁹ *Id.* at p. 25.

categorization of only certain types of transmission projects as load- or reliability-related is conservative, and is likely to understate the portion of the utility’s transmission costs that are driven by peak demands and that should be included in the calculation of avoided transmission costs.”²⁰ As Mr. Beach notes, “the transmission system is a network, and an addition that is made principally for one reason (for example, reliability) also will increase the system capacity to serve load growth, as a secondary benefit. More transmission projects should be characterized as system-wide projects than those identified in the Utilities’ reports to the Commission.”²¹

As in the 2022 ACC, SCE’s avoided transmission costs “were based on just a single circuit upgrade and one new substation project, even though there was a longer list of reliability-related SCE transmission projects in the CAISO TPP at that time.”²² Mr. Beach’s testimony supports my testimony that “cherry-pick[ing] very low-cost transmission projects” appears “to generate low avoided transmission costs”²³ and that “[t]he systemwide avoided transmission cost calculated by SCE, \$2.80/kW-yr, implies that systemwide capacity additions are effectively free. Yet the IOUs are collectively adding more than \$2 billion per year in new transmission additions.”²⁴ The projected capacity-related transmission projects for PG&E, SCE, and SDG&E for 2020-2025, as used in the ACC, totaled less than \$500 million.²⁵ Actual capital spending on transmission system upgrades by the Utilities is on the order of twenty times the universe of transmission capital spending included in the ACC. Presuming erroneously low system-wide transmission costs to achieve large systemwide capacity increases improperly undervalues NEM and other DERs that would otherwise delay or eliminate new transmission capital expenditures.

²⁰ R.22-11-013, Prepared Direct Testimony of R. Thomas Beach on Behalf of the Solar Energy Industries Association (October 30, 2023), p. 24.

²¹ *Ibid.*

²² R.22-11-013, Prepared Direct Testimony of R. Thomas Beach on Behalf of the Solar Energy Industries Association (October 30, 2023), p. 23.

²³ R.22-11-013, Direct Testimony of Bill Powers, P.E. on Behalf of The Protect Our Communities Foundation (October 30, 2021), p. 8.

²⁴ *Ibid.*

²⁵ R.20-08-020, Opening Brief of The Protect Our Communities Foundation (August 31, 2021), p. 16 (citing R.20-08-020, Reporter’s Transcript (Vol. 12), p. 2155:6-17 (PCF Attorney Folk questioning CalAdvocates Witness Rounds)).

Q. Please provide an example in which the Commission concluded that the Utilities were understating which transmission projects were capacity-related.

A. As Mr. Beach testified, the Commission has previously found “that PG&E had understated significantly the portion of its transmission projects that were load related and thus deferrable.”²⁶ Mr. Beach then cites to D.21-11-016, which was the decision in which the Commission decided to adopt SEIA’s proposed marginal transmission capacity cost (MTCC) of \$52.45/kW-yr,²⁷ which was later used in the 2022 ACC documentation.²⁸ SEIA had calculated their proposed MTCC by assuming that “27 percent of PG&E’s transmission projects are deferrable.”²⁹ These projects were deferrable because they were “capacity-related -i.e., this is the fraction of transmission investments necessary to provide the capacity to meet customers’ peak demands, and thus can be impacted by a change in customer demand during peak periods.”³⁰ PG&E had responded to SEIA’s arguments by stating that “if a transmission project is related to reliability concerns or Commission mandates then it cannot be deferred, regardless of whether that reliability concern is tied to peak demand.”³¹

As noted in Mr. Beach’s testimony, the Commission was unconvinced by PG&E’s arguments.³² Instead, the Commission agreed with SEIA “that capacity-related projects are tied to some degree to demand and load growth given that reliability concerns may logically be tied to increases in peak customer demand.”³³ I agree with Mr. Beach’s conclusion that “these reliability-related costs should be avoidable when DERs allow customers to reduce the peak demands that they place on the grid.”³⁴ By incorrectly categorizing which transmission projects

²⁶ R.22-11-013, Prepared Direct Testimony of R. Thomas Beach on Behalf of the Solar Energy Industries Association (October 30, 2023), p. 25.

²⁷ D.21-11-016, Decision Adopting Marginal Costs, Revenue Allocation, and Rate Designs for Pacific Gas and Electric Company, Order 10 (November 18, 2021), p. 167

²⁸ CPUC, 2022 Distributed Energy Resources Avoided Cost Calculator Documentation: For the California Public Utilities Commission, Version 1b Updated (September 15, 2022), p. 50, available at <https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/demand-side-management/acc-models-latest-version/2022-acc-documentation-v1b-updated.pdf>.

²⁹ D.21-11-016, Decision Adopting Marginal Costs, Revenue Allocation, and Rate Designs for Pacific Gas and Electric Company (November 18, 2021), p. 66

³⁰ *Ibid.*

³¹ *Id.* at p. 67.

³² R.22-11-013, Prepared Direct Testimony of R. Thomas Beach on Behalf of the Solar Energy Industries Association (October 30, 2023), p. 25.

³³ *Ibid.*

³⁴ *Id.* at p. 25-26.

could be delayed or cancelled by DERs, the IOUs were improperly reducing the avoided transmission cost value of DERs.

Q: Do you share SEIA’s concerns that policy-related transmission costs are not being included in RESOLVE modeling or accounted for in the ACC?

A. Yes. As noted in SEIA’s testimony, the RESOLVE modeling used for the Integrated Resource Planning’s (IRPs) draft Preferred System Plan (PSP) does not include \$2.5 billion of “approved “policy-related” transmission investments needed to allow the continued growth of utility-scale renewable generation over the coming decade.”³⁵ I agree that this leads to concerns about “under-stating the avoided costs to meet the GHG constraints in the IRP” and that these transmission costs “should be considered to be avoidable by DERs.”³⁶ As an example, SEIA cites that “the three CAISO TPPs from 2016-2017 to 2018-2019 included reduced transmission costs due to previously-approved projects that were cancelled, delayed, or downsized as a result of lower load forecasts. The load forecasts used in these TPPs dropped in significant part due to the growth of DERs, primarily energy efficiency and BTM solar.”³⁷ And, as cited in PCF’s testimony, as part of CAISO’s 2015-2016 Transmission Planning Process, thirteen projects with a project total cost greater than \$113.5 million³⁸ were recommended to be cancelled because of “behind the meter generation and energy efficiency programs” which “have led to the review of several previously approved load growth-driven transmission projects . . . in the 2015-2016 transmission planning cycle and again in this [*the 2017-2018*] planning cycle.”³⁹ Therefore, we agree with SEIA that the Utilities understate the number of avoidable transmission projects.

³⁵ R.22-11-013, Prepared Direct Testimony of R. Thomas Beach on Behalf of the Solar Energy Industries Association (October 30, 2023), p. iii.

³⁶ *Id.* at p. iii-iv

³⁷ R.22-11-013, Prepared Direct Testimony of R. Thomas Beach on Behalf of the Solar Energy Industries Association (October 30, 2023), p. 19, fn 22.

³⁸ R.22-11-013, Response of the California Independent System Operator Corporation to Data Request Number PCF-CAISO-01 by The Protect Our Communities Foundation (October 20, 2023), p. 3 (PCF-01, Exhibit 4).

³⁹ CAISO, 2017-2018 Transmission Plan: Board Approved, p. 17, fn 11.

IV. THE AVOIDED TRANSMISSION STUDY SHOULD BE CONDUCTED AS SOON AS POSSIBLE

Q. Do you agree with the Clean Coalition that the Commission needs to conduct a study on avoided transmission costs as soon as possible?

A. Yes. As explained in the Prepared Direct Testimony of Ben Schwartz on Behalf of the Clean Coalition, the minor update to the ACC was eliminated so that “the major update could occur without a rushed process or skipping important topics.”⁴⁰ I agree that the avoided transmission cost “value should be updated as soon as possible.”⁴¹

Q. Do you agree with SEIA that it is acceptable to use unstudied methods to calculate avoided transmission costs in the 2024 ACC?

A. No. Unlike PCF, “SEIA accepts the continued use of the methods employed in the 2022 ACC to calculate avoided transmission costs, pending the study on methodology.”⁴² As I have shown, “the plain language of D.22-05-002. . . required the study promptly so that it could be used in the instant proceeding.”⁴³ The Commission should not continue to use inaccurate avoided transmission cost calculations in violation of D.22-05-002.

V. CONTRARY TO THE UTILITIES’ CLAIM, DERS PROVIDE COST SAVINGS.

Q. What is your opinion about the Utilities’ claim that the Commission should not include non-coincident distribution costs?

A. I disagree with the Utilities’ analysis in the section of their testimony entitled “Non-Coincident Distribution Costs Are Not Universally Avoided by All DERs and Should Thus Only Be Considered an Avoided Cost on a Program-Specific Basis.”⁴⁴

⁴⁰ R.22-11-013, Prepared Direct Testimony of Ben Schwartz on Behalf of the Clean Coalition (October 30, 2023), p. 3.

⁴¹ *Ibid.*

⁴² R.22-11-013, Prepared Direct Testimony of R. Thomas Beach on Behalf of the Solar Energy Industries Association (October 30, 2023) p. iv.

⁴³ R.22-11-013, Direct Testimony of Bill Powers, P.E. on Behalf of The Protect Our Communities Foundation (October 30, 2021), p. 5.

⁴⁴ R.22-11-013, Pacific Gas And Electric Company (U 39-M), San Diego Gas & Electric Company (U 902-M), And Southern California Edison Company (U 338-E) Opening Testimony In Response To

To explain their argument, the Utilities provide an example of “a 50 kW customer that increases their demand to 100 kW due to an investment in EV charging.”⁴⁵ The Utilities argue that “the customer’s connection and close-in network must be fortified to handle the 100 kW peak (i.e. their new non-coincident peak), even if that high peak is rarely reached.”⁴⁶ They also argue that “The fact that a customer may use their solar + storage system to inject power during periods of high system demand, and therefore decrease the likelihood of future investments to add capacity to serve coincident-peak demand, does not decrease the costs that are necessary to serve the customer’s 100 kW non-coincident peak or facilitate the delivery of the aforementioned injected power across the local network.”⁴⁷

The basic premise described by the IOUs erroneously assumes that all customers that add EVs will necessarily double the non-coincident peak demand at the customer site. This assumption constitutes a false premise. The customer can and likely will add a behind-the-meter (BTM) load management system to manage loads and avoid multiple high demand devices operating at the same time. The customer will be motivated in part to avoid an expensive upgrade to their BTM main panel. Likewise, the IOU’s “just and reasonable rates” obligation to customers should also motivate the Utilities to facilitate the installation of these BTM load management systems at customer sites precisely to avoid the larger expense of a local distribution network upgrade.

The IOU’s premise erroneously assumes their customers are voluntarily motivated to purchase EVs but completely passive in addressing the implications of adding EV(s) to BTM main panel upgrade requirements or to local distribution network impacts. The IOUs false premise should be rejected by the Commission. Non-coincident distribution costs are universally avoided by DERs when commonsense and money-saving energy management system(s) are assumed to be deployed by the customer at the customer’s expense or provided by the utility to the customer to avoid a more costly, local network upgrade. It is nonsensical to presume customers will voluntarily add substantial cost to themselves directly (i.e. main panel upgrade), and indirectly as ratepayers paying to upgrade the affected local distribution network, when

Administrative Law Judge’s Ruling Issuing The 2024 Avoided Cost Calculator Staff Proposal For Party Input (October 30, 2023), p. 25.

⁴⁵ *Id.* at p. 29.

⁴⁶ *Ibid.*

⁴⁷ *Ibid.*

lower-cost non-wires solution(s), such as a home energy management system, are widely available. The IOUs example fails under scrutiny and should be rejected by the Commission.

Q. Do you agree that with the Utilities that DERs will drive up costs?

A. No. The Utilities erroneously infer, with their 50 kV to 100 kV customer upgrade example, that including non-coincident distribution costs as part of the ACC will “drive up customer costs through costlier programs due to inflated cost-effectiveness valuations and excessive compensation through the Net Billing Tariffs (NBT); the implied savings in system costs simply does not exist. This will ultimately drive up rates over the long term and result in greater disparity between customers who participate in DER and those who do not.”⁴⁸ The Utilities' suggestions that implied savings do not exist, and that including non-coincident distribution costs as part of the ACC will drive up rates and result in a greater disparity between customers who participate in DER and those who do not is false.

These implied cost savings do exist, and including non-coincident distribution costs will not drive-up rates for customers who do not participate in DER adoption. One of the major contributors to distribution costs is wildfire mitigation.⁴⁹ If the full effects of NEM solar are accurately accounted for, any “cost shift” between NEM solar customers and other customers will be completely counterbalanced by avoided transmission and distribution costs. As I have previously explained in my rebuttal testimony in R.20-08-020, “[s]aturation deployment of customer-sited solar and storage in extreme High Fire Threat District (HFTDs) has the potential to save IOU customers a substantial portion of the nearly \$40 billion the CPUC forecasts will be spent by the IOUs on hardening the existing T&D system in extreme HFTDs in the 2020-2030 period.”⁵⁰ I calculated that if half of the proposed \$40 billion is avoided over those ten years by NEM solar and storage, the annual avoided transmission and distribution hardening costs would be around \$2 billion per year, which was three times the estimated residential NEM cost-shift.⁵¹ As I testified, any cost shift to customers would be outweighed by the avoided costs of

⁴⁸ *Ibid.*

⁴⁹ R.20-08-020, Rebuttal Testimony of Bill Powers, P.E. (July 16, 2021), p. 28.

⁵⁰ *Id.* at p. 28-29.

⁵¹ *Id.* at p. 29.

transmission and distribution that would have been built if NEM solar and storage was not utilized to address the wildfire mitigation need.⁵²

The conclusions the Utilities’ draw when discussing their 50 kV to 100 kV customer upgrade example are based on flawed assumptions and should be accorded no weight by the Commission.

VI. GOOGLE LLC CORRECTLY IDENTIFIES THAT, WITHOUT CHANGES, THE ACC CAN CAUSE “ENORMOUS SWINGS IN COST-EFFECTIVENESS.”

Q. What other concerns do you have about the ACC after reviewing the opening testimony?

A. Large year-to-year fluctuations in the calculated avoided costs in the ACC create substantial doubt in financial investments based in part in the long-term stability of ACC values. I share Google LLC’s concerns that the “cost-effectiveness of the programs is highly dependent on the year-over-year changes to the Avoided Cost Calculator” and that “[t]he Avoided Cost Calculator can create enormous swings in cost-effectiveness.”⁵³ As Google notes, even without changes in program design, changes to the input values completely changes “the posture of the programs themselves and the demand response portfolio as a whole is now dramatically different.”⁵⁴

I also agree with Google that:

These challenges create both program and business uncertainty, at a time when demand response is aggressively needed in the state of California. The very notion that there is any uncertainty around the future of demand response when the California legislature has separately invested \$300M in additional demand response programs through the Demand Side Grid Support program is a strong indicator that DR value is not effectively being captured in the IOU-administered programs due to rules around cost-effectiveness.⁵⁵

Any asset whose value fluctuates dramatically from year-to-year has little inherent value and would be challenging to finance. The Commission identifies demand response (DR) as the

⁵² *Ibid.*

⁵³ R.22-11-013, 2024 Avoided Cost Calculator Prepared Testimony of Aaron Berndt On Behalf Of Google LLC, (October 30, 2023), p. 8.

⁵⁴ *Ibid.*

⁵⁵ *Id.* at p. 8-9 (citations omitted).

highest-ranked action in the state’s Loading Order.⁵⁶ The ACC should not be used to enable the IOUs to thwart the clear strategic priority the Commission has assigned to DR.

Q. What are the consequences if a program is not deemed cost-effective?

A. Google is correct in observing that “if a program is deemed halfway through a cycle to not be cost-effective, it could create justification for the dissolution of that program and the abandoning of customers and capacity, even if the very next cycle the Avoided Cost Calculator finds the program to be cost-effective again.”⁵⁷ This price uncertainty will affect not just customers and vendors of specific products such as Google Nest, but also the broader customer base whose bills will fluctuate depending upon whether DR programs are deemed cost-effective.

⁵⁶ D.12-04-045, Decision Adopting Demand Response Activities and Budgets for 2012 through 2014 (April 19, 2012), p. 73 (“we must be consistent in enforcing the loading order articulated in Energy Action Plan II and ensure that the Utilities do not procure or build conventional generation when DR may meet the same system need”); *see also id.* at Findings of Fact 4, p. 206 (“The Commission remains committed to the Energy Action Plan’s loading order whereby energy efficiency and demand response are the preferred means of meeting California’s energy needs.”)

⁵⁷ R.22-11-013, 2024 Avoided Cost Calculator Prepared Testimony of Aaron Berndt On Behalf Of Google LLC (October 30, 2023), p. 9.