

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



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Application of Southern California Edison Company (U338E) for Authority to Establish Its Authorized Cost of Capital for Utility Operations for 2020 and to Partially Reset the Annual Cost of Capital Adjustment Mechanism.

Application 19-04-014
(Filed April 22, 2019)

And Related Matters.

Application 19-04-015
Application 19-04-017
Application 19-04-018

**OPENING BRIEF OF
PACIFIC GAS AND ELECTRIC COMPANY (U 39 M)**

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Pursuant to Rule 13.11 of the Commission's Rules of Practice and Procedure and the September 13, 2019 ruling of Administrative Law Judge (ALJ) Stevens, Pacific Gas and Electric Company (PG&E) submits this opening brief in the above-captioned proceedings. These proceedings are the consolidated Cost of Capital (COC) cases for Southern California Edison Company (SCE), San Diego Gas & Electric Company (SDG&E), Southern California Gas Company (SoCalGas) and PG&E.

I. INTRODUCTION AND SUMMARY OF RECOMMENDATIONS

A. PG&E's proposed cost of capital should be approved

PG&E proposes the following cost of capital for the Test Year 2020:

PG&E Proposed Cost of Capital¹

	Cost	Capital structure	Weighted cost
Long-term debt	5.16%	47.5%	2.45%
Preferred stock	5.52%	0.5%	0.03%
Common equity	12.00%	52.0%	6.24%
Return on Rate Base	--	--	8.72%

¹ Ex. PG&E-02, p. 1-1.

Most of PG&E's proposals for return on rate base (ROR) are undisputed²:

- No party has challenged PG&E's cost of long-term debt.
- No party has challenged PG&E's cost of preferred stock.
- No party has challenged PG&E's 52 percent equity.³

Thus, for all intents and purposes, the only significant dispute with PG&E's proposal is the proposed cost of equity (return on equity or ROE).

1. PG&E's proposed ROE should be approved

All intervenors who made ROE proposals argue for lower amounts than PG&E's currently authorized 10.25 percent, except the Institutional Equity Investors (IEI).⁴ Parties' proposals are set forth in the table below.

Parties' Proposed ROEs for PG&E⁵

	DEL MONTE	PAO	EPUC/IS/TURN	FEA	PG&E	IEI
Proposed ROE, electric	7.11%	8.49%	9.65%	9.75%	12.0%	15.2%
Proposed ROE, gas	7.11%	8.49%	9.00%	9.75%	12.0%	15.2%

The ROEs advocated by Del Monte, PAO, EPUC/IS/TURN and FEA are inadequate to

² PG&E only addresses proposed ROEs and capital structure proposals made in this case for PG&E. The witness for the Environmental Defense Fund (EDF) did not actually propose a ROE for test year 2020 for PG&E. (EDF, McCann, Tr. 1059:27 to 1060:2.)

³ Del Monte accepts the idea of a 52 equity percentage, but his witness says that the equity percentage and ROE need to be adjusted together using ATWACC. Hence Del Monte recommended a capital structure with 48.66% common equity that was consistent with Del Monte's 7.11% ROE recommendation. (Ex. Del Monte-01, p. 45, line 13 to p. 46, line 6.) Del Monte proposed that to the extent the Commission adopts a common equity ratio different than 48.66%, the Commission should adjust Del Monte's ROE recommendation to reflect the higher or lower leverage adopted by the Commission, and to do so using the after tax weighted average cost of capital (ATWACC) method of adjusting for leverage. (Ex. Del Monte-01, p. 46, lines 6-8.)

⁴ The parties are the Public Advocates Office (Cal Advocates or PAO), the Federal Executive Agencies (FEA), Del Monte/Knecht (Del Monte) and Energy Producers and Users Coalition/Indicated Shippers/The Utility Reform Network (EPUC/IS/TURN).

⁵ Ex. EPUC/IS/TURN-01, Ch. II, Exhibit MGP-1, lines 3 and 7; Ex. FEA-01, p. 100, lines 4-5; Ex. IEI-01, p. 7, lines 3-4; Ex. Cal Advocates-01, p. 5, Table 4; and, Ex. Del Monte-04, p. 2, lines 15-18.

provide a return commensurate with market returns on investments with comparable risks, and to attract additional capital on a comparable and compensatory risk-adjusted basis. In California, utility investors face increased risk, compared to other states. Most notably, catastrophic wildfire and inverse condemnation are unique risks with which California utilities must contend.

A fair ROE and ROR are critical for PG&E's ability to attract capital that is needed to fund important infrastructure improvements on behalf of the 16 million people who depend on us for the safe and reliable operation of our gas and electric systems. This need is great. In the four years from 2019-2022, PG&E expects to invest up to \$28 billion in essential energy infrastructure investments across its service area for the benefit of the communities and customers we serve.

PG&E's requested ROE—and the related ROR—are necessary to adequately compensate its capital investors and to attract additional capital on a comparable and compensatory risk adjusted basis. PG&E's requested ROE is important to its ability to make such investments, especially in the current California operating and regulatory environment.⁶

Currently, PG&E is in Chapter 11 and is using its debtor-in-possession financing along with cash from operations to meet operating needs. During this period PG&E cannot issue new equity, or access new debt outside the bankruptcy. PG&E targets resolution of its Chapter 11 Case no later than June 30, 2020. Thus, the 2020 ROE will need to be sufficient to attract capital for investments to provide safe and reliable service, support PG&E's credit quality, and provide a fair return to shareholders.⁷

2. PG&E's proposed cost of long-term debt should be approved

PG&E proposes a 5.16 percent cost of long-term debt. No party has opposed this amount. Thus, PG&E's proposed cost of long-term debt should be approved.

3. PG&E's proposed cost of preferred stock should be approved

PG&E proposes a 5.52 percent cost of preferred stock. No party has opposed this

⁶ Ex. PG&E-01, p. 1-1.

⁷ Ex. PG&E-01, p. 1-1.

amount. Thus, PG&E's proposed cost of preferred stock should be approved.

4. PG&E's proposed capital structure should be approved

PG&E does not propose any change in its authorized capital structure, except to reflect a slight reduction in the preferred stock percentage. The slight drop in PG&E's preferred stock percentage is matched by a slight increase in its debt percent, which leaves its 52 percent equity ratio unchanged for this case.

No party has challenged PG&E's proposed capital structure.⁸ For the reasons discussed in Section IV of this brief, PG&E's proposed capital structure should be approved.

B. The Cost of Capital Adjustment Mechanism should be maintained

PG&E proposes to continue the cost of capital adjustment mechanism unchanged for the 2020-2022 cost of capital case cycle. The mechanism has been in use since 2008. As provided for under the existing mechanism, the benchmark interest rate would be adjusted using a 12-month average of utility bond interest rates, subject to a "dead band" of 100-basis points.⁹

SDG&E and SoCalGas propose to narrow the dead band from 100-basis points to 50 points, making it more sensitive to being triggered.¹⁰ Del Monte would eliminate the mechanism all together.¹¹

PG&E opposes both of these proposals. The mechanism is designed to provide an adjustment if the then-current market cost of debt deviates significantly from what was used for the last cost of capital. This keeps ROE and ROR from getting too far out of line with market conditions, at the same time not being too sensitive to being triggered if market conditions have not changed significantly.

⁸ See, footnote 3, *ante*.

⁹ *Phase 2 Decision on the Cost of Capital Adjustment Mechanism* (Apr. 2, 2013) D.13-03-015, *mimeo*, p. 10, Ordering Paragraph (OP) 6. For the cost of capital adjustment mechanism, PG&E will continue to use the BBB rating as its benchmark, and the advice letter process currently in place.

¹⁰ Ex. SCG-01, p. 14, lines 14-17; Ex. SDG&E-01, p. BAF-21, line 17.

¹¹ Ex. Del Monte-01, p. 59, line 30 to p. 60, line 3.

C. PG&E's proposal for Customer Deposits should be approved

The only intervenors to address the issue of customer deposits were Cal Advocates and TURN. Cal Advocates recommended dealing with the issue in PG&E's 2020 GRC Phase I proceeding and did not complete a proposal in this case.¹² Cal Advocates' position is unfortunate insofar as PG&E was directed by the Commission to address this issue in the current proceeding. In PG&E's 2014 GRC, the Commission stated, "we direct that a comprehensive review of the treatment of customer deposits should be made in the next cost of capital proceeding."¹³

With respect to TURN's position, both TURN and PG&E agree that while PG&E is in bankruptcy and is holding cash (in money market funds) in sufficient amounts to cover the deposits, no ratemaking adjustments would be appropriate.¹⁴ Once PG&E emerges from bankruptcy, PG&E proposes to commingle the cash from customer deposits with other cash for use to support operations.¹⁵ TURN agrees that PG&E's mechanism would be appropriate as an interim solution, until the issue can be litigated again in a future cost of capital proceeding.¹⁶

TURN also argues that it would appropriate to apply customer deposit amounts to reduce both equity and long-term debt, i.e., to reduce rate base.¹⁷ PG&E disagrees with TURN's proposal because like debt, customer deposits are subject to being paid back to the holder of the interest. TURN's proposal would treat a portion of customer deposits like equity, which they are not. Therefore, PG&E proposes to continue treating the customer deposits as a long-term source of debt financing invested in long-term assets.¹⁸ PG&E believes that the Commission has

¹² Ex. Cal Advocates-09, p. 4, line 25 to p. 5, line 17.

¹³ *Decision Authorizing PG&E's GRC Revenue Requirement for 2014-2016* (Aug. 20, 2014) D.14-08-032, *mimeo*, p. 629.

¹⁴ Ex. PG&E-03, p. 3-6, lines 7-11; Ex. TURN-02, p. 1, lines 6-8.

¹⁵ Ex. PG&E-03, p. 3-4, line 6 to p. 3-5, line 10.

¹⁶ Ex. TURN-02, p. 1, lines 6-15.

¹⁷ Ex. TURN-02, p. 3, line 5 to p. 5, line 14.

¹⁸ In that event, the appropriate ratemaking treatment is to assume that a portion of rate base equal to the average annual balance of customer deposits is funded with customer deposits, at an interest rate equal to the rate paid to the depositors. To achieve this in rates, the total revenue requirement otherwise adopted by the Commission is reduced by the cost of the conventional debt that is replaced with CDs, and then the revenue requirement would be increased for the cost of the interest paid on CDs.

sufficient evidence in this proceeding to adopt ratemaking principles for the treatment of customer deposits, and does not need to entertain further litigation, either in PG&E's current GRC as Cal Advocates wants, or in a future cost of capital proceeding as Turn proposes.

D. Given the passage of AB 1054, it is no longer clear that PG&E would need to file a new COC application when it emerges from bankruptcy

Since PG&E filed its application, California enacted Assembly Bill (AB) 1054 to address utility cost responsibility for wildfire risk and liabilities, including establishment of a Wildfire Fund.¹⁹ The parties' August 1 supplemental testimony and subsequent rebuttal and surrebuttal testimony address AB 1054, wildfire risk and ROE. Because AB 1054 has been addressed in this case, it is no longer clear that PG&E would need to file a new COC application after emerging from Chapter 11.

If PG&E satisfies AB 1054's requirements and participates in the Wildfire Fund (as is the Company's goal), and the ROE authorized in this case recognizes residual wildfire risk that remains with the utilities, PG&E is not likely to need to file a new COC application for ROE after emergence from bankruptcy. On the other hand, if PG&E does not qualify to participate in the Wildfire Fund, a new COC application will be necessary to reset PG&E's ROE and cost of capital to reflect these circumstances.²⁰

PG&E does anticipate that its cost of long-term debt upon emergence from bankruptcy will be different than the cost of debt requested in this application. Therefore, PG&E proposes to update its cost of debt for the period beginning after it emerges from bankruptcy to incorporate the costs of its exit financing, and the appropriate forward-looking forecast of debt costs for the remaining forecast period.

II. LEGAL STANDARDS AND POLICY CONSIDERATIONS

The United States Supreme Court's *Hope* and *Bluefield* decisions set the legal standard

¹⁹ AB 1054, Stats. 2019, Ch. 79.

²⁰ Nothing in this proceeding is meant to affect the Commission's authority to direct PG&E to present cost of capital issues as a result of the Commission's review of the Plan of Reorganization for PG&E's emergence from bankruptcy. Consequently, a new cost of capital application could result from a future Commission order outside this docket.

that a public utility is entitled to the opportunity to earn a return on invested capital that is comparable to returns on investments of similar risk, and that maintain the utility's credit quality, financial soundness, and ability to attract capital.²¹

The Commission follows the precedent of *Hope* and *Bluefield*. In the Commission's words:

We attempt to set the ROE at a level of return commensurate with market returns on investments having corresponding risks, and adequate to enable a utility to attract investors to finance the replacement and expansion of a utility's facilities to fulfill its public utility service obligation.²²

A. Contrary to the suggestion of some parties, there is nothing about PG&E's ROE proposal that would reward negligence, fines or penalties

A common false theme for some parties in this case is that PG&E's ROE proposal is designed to, or would, reward the Company for negligence, fines or penalties.²³ This is not true. And there is no evidence for it on the record.

In contrast to this theme proffered by parties, PG&E has confirmed that it is not the Company's intention to propose a ROE that would reward the company for such activity. As explained by PG&E's witness Bijur:

ALJ Stevens: I'm interested in how you are factoring those [i.e., negligence, fines and penalties] into your ROE calculation. I think that gets into the heart of [EDF counsel's] question.

Witness Bijur: No, no, thank you for clarifying. The answer is: It is not factored into ROE.²⁴

PG&E's approach is consistent with that of the other utilities. The utilities have correctly explained that the purpose of this proceeding is to set a ROE that will allow the utility to attract equity capital, commensurate with expected risk, over the years 2020-2022.²⁵ This is the *Hope*

²¹ *Federal Power Commission et al. v. Hope Natural Gas Co.* (1944) 320 U.S. 591, 602-603, and *Bluefield Water Works & Imp. Co. v. Public Service Comm'n of the State of Virginia* (1923) 262 U.S. 679, 692-693.

²² *Opinion on Test Year 2008 Cost of Capital for the Major Energy Utilities* (Dec. 21, 2007) D.07-12-049, *mimeo*, p. 10.

²³ See, e.g., Ex. Del Monte-04, p. 10, lines 27-28 ("The point is that costs incurred imprudently or unreasonably should never be recovered from ratepayers. . .").

²⁴ PG&E, Bijur, Tr. 39:16-22.

²⁵ See, e.g., Ex. PG&E-01, p. 1-11, lines 15-19 ("PG&E will need to offer investors a return

and *Bluefield* standard.

Some parties have argued that PG&E's proposed ROE would reimburse the company for past liabilities. For instance, Witness Knecht testifies:

[E]ven with the recovery of costs PG&E may have incurred or may yet incur due to the Northern California megafires in 2018 is at issue in other proceedings and thus not yet quantified or guaranteed, *PG&E requests the Commission to order indirect recovery here of the full amount of its speculative estimate of such costs* via ROE adders in this docket.²⁶

Witness Knecht continues:

PG&E here seeks to improperly receive full compensation via its allowed COC for past costs it has incurred and future costs it may incur due to its past actions.²⁷

These statements are false.

The *Hope* and *Bluefield* decisions do not call for compensating utilities for past liabilities through future ROEs. Neither has PG&E. PG&E understands that the forum to address past liabilities is the Bankruptcy Court where PG&E filed its Chapter 11 case. PG&E has not sought to address these liabilities here.

The ROE is forward-looking. PG&E agrees with Witness Folkmann that “[o]ur ROE is not designed to recover costs that have been disallowed, under any standard.”²⁸ Any suggestion to the contrary by the parties should be summarily dismissed.

B. Application of the *Hope* and *Bluefield* standard for California utilities must recognize the high level of risk due to California policies

Under today's circumstances, identifying a “level of return commensurate with market returns on investments having corresponding risk,” and sufficient to attract capital has become more complicated than in the past. Wildfire and inverse condemnation are now the biggest risks, but not the only risks.

commensurate with the risks as long as those risks persist. The financial reality is that investors have choices, and they need not invest where the risks are greater than their willingness to bear, or their expected returns are not commensurate with the risk.”).

²⁶ See, e.g., Ex. Del Monte-01, p. 5, lines 18-21 (emphasis added).

²⁷ See, e.g., Ex. Del Monte-01, p. 6, lines 25-26. This statement is repeated verbatim in Witness Knecht's rebuttal testimony. (Ex. Del Monte-04, p. 10, lines 5-6.)

²⁸ SDG&E, Folkmann, Tr. 796:4-6.

California has continued its policies for aggressive change in the electric utility industry, toward a clean energy future. The California Renewables Portfolio Standard (RPS) has increased since the last COC case to 60 percent by 2030 and 100 percent carbon-free electricity by 2045.²⁹ This change creates significant challenges for grid reliability and operation. Intervenor's claims that other states' policies are similar do not hold up.³⁰ California is out in front. And this poses additional risks for California utilities.

Meanwhile, the pace of technology change in California is accelerating, and creating risks for the transmission and distribution systems.³¹ Customer unbundling is growing in scope and significance, with large departures of load to community choice aggregators (CCAs) (up to 85 percent of retail load by the mid-2020s), which further complicates the problem for utility commitment to longer-term resources and creates cost recovery uncertainty.³² And now we have wildfire risk and inverse condemnation taking the level of risk in California to a whole new level.

In the past, PG&E reflected the impact of increased financial, business and regulatory risk in its selection of a specific ROE within the range of its financial modeling results.³³ In this case, before taking wildfire risk into account, PG&E witness Vilbert identified an 11 percent ROE for PG&E, in the high end of the regulated electric utility range.³⁴ When the risks of

²⁹ Ex. SCE-01, p. 10, lines 4-9. The high RPS requirements will increase the impact of debt equivalence. SDG&E/SoCalGas, Morin, Tr. 316:23 to 317:9.

³⁰ SCE, Stern, Tr. 127:22 to 131:14.

³¹ Ex. SCE-01, p. 10, line 10 to p. 12, line 10. California's widespread promotion of distributed energy resource deployment such as rooftop solar, and energy storage are adding to the challenges and risks, especially since they will require the capacity to accommodate large amounts of two-way power flows, whereas the utilities' distribution systems have historically been structured to accommodate power flows for delivery to the customer premises. (*Id.*, p. 12, lines 12-21.)

³² Ex. SCE-01, p. 21, line 20 to p. 23, line 7. The departure of customers to CCA also creates cost recovery risk as controversy continues over the Power Charge Indifference Adjustment (PCIA). (*Id.*, p. 23, line 8 to p. 24, line 9.)

³³ *Decision on Test Year 2013 Cost of Capital for the Major Energy Utilities* (Dec. 26, 2012) D.12-12-034, *mimeo*, pp. 28-29.

³⁴ Ex. PG&E-01, p. 2-2, lines 5-7. However, since PG&E is not paying dividends and is not investment grade, a typical sample of regulated electric utilities would not be of comparable risk. *Id.* at lines 10-12, and p. 2-8, lines 16-18. PG&E's investors are exposed to greater risk than the average U.S. utility, and Dr. Vilbert concluded that an appropriate ROE reflecting PG&E's

wildfire are considered, PG&E's recommended ROE increases to 12 percent, even with AB 1054's effect of mitigating wildfire risk exposure.³⁵

From a policy perspective, the Commission should recognize the higher risks faced by California regulated utilities in establishing the reasonable range for the 2020 ROE, even without incorporating wildfire risk. At a minimum, PG&E's authorized 2020 ROE must be at the high end of that range, even before residual wildfire risk and inverse condemnation are considered.

C. The ROE needs to include California-unique wildfire and inverse condemnation risk

The greater probability of wildfire risk combined with liability under inverse condemnation for California utilities is unique to California,³⁶ and of major concern to investors and credit rating agencies. In February, this risk led Standard & Poor's (S&P) to comment on the potential for California to not have investment grade electric utilities without supportive action by the state.³⁷ Subsequently, SCE and SDG&E's credit ratings were downgraded several notches to the lowest category of investment grade. In July 2019, California addressed utility wildfire risk in AB 1054, but that has not been adequate to return any of the electric utilities to their former higher credit ratings.³⁸

As a policy matter, the approved ROE in this case needs to compensate investors for all risks – including wildfire and inverse condemnation – presented when investors put their dollars at work in the utility.³⁹ That means the approved ROE in this case must be higher than the range for the comparator groups because these comparator groups do not reflect these major California-specific risks.⁴⁰

Investors' required return on equity investment is holistic in nature; it is generally not

current level of risk could be in the range of 13 to 18.5%. *Id.* at p. 2-86, lines 2-7; Ex. PG&E-02, p. 1-2, lines 7-10, and Table 2-23-Revised, p. 2-4.

³⁵ Ex. PG&E-02, p. 1-1, lines 14-17.

³⁶ SDG&E, Coyne, Tr. 754:14-24; IEI, Hern, Tr. 613:19 to 614:8.

³⁷ Ex. PG&E-01, p. 2-8, lines 5-6, fn. 4.

³⁸ SDG&E, Morin, Tr. 197:4-9; Tr. 272:7-11.

³⁹ SDG&E, Folkmann, Tr. 796:6-8.

⁴⁰ IEI, Hern, Tr. 595:22 to 596:1.

granular in approach.⁴¹ However, for ROE purposes, wildfire risk requires specific analysis, especially since AB 1054 narrowed the range of potential damages and introduced different kinds of exposure.⁴²

AB 1054 creates a process and Wildfire Fund, as well as conditions and limits on the exposure of participating California electric utilities to wildfire damages. These portions of AB 1054 are complex and the effect of future implementation is uncertain.⁴³ PG&E can only participate in the Wildfire Fund if it meets certain conditions by June 30, 2019, which we assume will occur for purposes of this proceeding. Using this assumption, AB 1054 allowed PG&E to reduce its “all-in” ROE estimate from 16 percent to 12 percent.⁴⁴

PG&E was unable to reduce its ROE request further because AB 1054 leaves residual risk for potential wildfire liability with the utility. That residual risk can be classified into three general areas: (1) Wildfire Fund durability, (2) coverage risk due to cap exposure and risks of disallowance under AB 1054 implementation, and (3) continuing risk from inverse condemnation. These residual risks will continue to be faced by utility investors. Sound policy requires that the residual risk be part of the determination of the reasonable ROE established here.

1. Wildfire Fund durability

The liquidity or durability of the Wildfire Fund refers to the potential for the fund to be exhausted. The legislative analysis of the durability of the Wildfire Fund began with calculating the totality of a claim applicable (generically) to a utility.⁴⁵ That amount was then reduced by an assumed settlement rate of 40 to 45 percent, the FERC portion of the claim, and the utility’s level of insurance, to produce the amount presented to the Wildfire Fund. The analysis then assumed

⁴¹ *Cf.*, SDG&E, Morin, Tr. 314:20-27.

⁴² PG&E/SCE, Graves and Mudge, Tr. 468:21 to 469:9.

⁴³ Ex. PG&E-04, p. 2, line 4 to p. 4, line 7.

⁴⁴ Ex. PG&E-02, p. 1-2, and Chapter 3.

⁴⁵ SDG&E, Reed, Tr. 714:8 to 715:14. The Felsinger analysis reportedly used \$7 billion as a generic claim. PG&E witnesses Graves and Mudge evaluated the different assumptions about the potential claims in their supplemental report. (Ex. PG&E-02, Chapter 3, Attachment 1.)

a level of disallowance ranging from 75 to 25 percent. For amounts determined to be imprudently incurred in a utility-related ignition by the Commission, the utility's responsibility would be capped at 20 percent of its transmission and distribution equity rate base, on a rolling three-year basis, while the Fund is liquid.⁴⁶

The Wildfire Fund exhaustion risk is not tied to a given utility's own performance or risk profile. Instead it is "contagion risk" by being in California and by having liquidity or the durability of the Wildfire Fund be subject to the performance of other utilities as well.⁴⁷ Once the Fund is exhausted, the utility is back on the hook for full responsibility to cover all wildfire damages under the principle of inverse condemnation. That is part of wildfire risk to investors.

The durability analysis is very sensitive to the assumptions used, especially those about the cumulative claim exposure, settlement percentage rates, and levels of disallowance.⁴⁸ These assumptions vary. One can debate whose assumptions to use, as the parties have done in this proceeding.⁴⁹ What is beyond dispute, however, is that there is uncertainty regarding which assumptions will prevail and whether the Fund will be durable. The risk of shortfall is possible even in the early years.⁵⁰ That uncertainty creates risk for investors.

2. Prudence and disallowance

There is uncertainty relating to AB 1054 concerning possible disallowances of wildfire costs relating to the new standard of prudence.⁵¹ As mentioned above, the analysis supporting

⁴⁶ Cal. Pub. Util. Code § 3292(i); Ex. SDG&E-01-S, p. 4, lines 1-4.

⁴⁷ SDG&E, Reed, Tr. 717:17-25. Note, if no costs are ever disallowed, "you would run out of money [in the fund] pretty soon." (PG&E, Graves, Tr. 524:27 to 525:7, *accord*, SCE, Coyne, Tr. 680:20-22.)

⁴⁸ PG&E witnesses Graves and Mudge summarize their values for key assumptions in Ex. PG&E-03, p. 2-3, lines 3-27, as well as in Ex. PG&E-02, Chapter 3, Attachment 1, p. 3-Atch1-14 to p. 3-Atch1-15.

⁴⁹ Messrs. Graves and Mudge summarize their analysis for both Fund durability and prudence/disallowance exposure at Ex. PG&E-03, p. 2-3, and in Ex. PG&E-02, Chapter 3, Attachment 1, p. 3-Atch1-14 to p. 1-Atch1-17.

⁵⁰ Ex. PG&E-02, p. 3-3, lines 9-12, and Chapter 3, Attachment 1, p. 3-Atch1-13. The low probability of depletion in the Filsinger report depends enormously on the settlement range. PG&E, Graves, Tr. 529:5 to 530:14. Mr. Graves testimony (Tr. 530:4-14) describes how the cadence and size of claims could cause early depletion, too.

⁵¹ PG&E/SCE, Graves, Tr. 532:10-17.

AB 1054 assumed a level of disallowance ranging from 75 to 25 percent. Of course, prudence findings will be event-specific, but the market is waiting to see what happens.⁵²

If the utility has the requisite safety certification from the Commission, AB 1054 provides a rebuttable presumption that the utility acted prudently related to a wildfire ignition.⁵³ The burden of proof shifts back to the utility if “serious doubt” is created as to the reasonableness of the utility’s conduct.⁵⁴ AB 1054 also revised standards for prudency review.⁵⁵

These revisions should provide better clarity over time. However, until there is a track record showing application of these standards, investors see risk. This risk requires a premium in the ROE.⁵⁶ The risk of wildfire is extremely large. Thus, the application of the new legal standard is extremely important and its demonstrated application is critical in assessing its application.⁵⁷ As testified by Witness Graves,

Preparing for fires is extraordinarily complex in a way that is not similar to other utility operations in the past. And so the notion that it’s going to be objective and clear as to why a utility might have been deemed adequately prepared is – I think way optimistic. So I’m pretty confident they will be found to have not been adequately reasonable for reasons that many people might disagree with.⁵⁸

In surrebuttal testimony, Witness Graves and Mudge explain:

- The standards are not yet articulated and certainly have never been applied and tested in the context of wildfires.
- The measurement of wildfire risk, especially for rare extreme wildfires that motivated AB 1054 and the requested ROE premiums, is extremely difficult.
- There is a tendency to apply hindsight in evaluating causes of wildfires and, after the fact, it may appear that a wildfire had a simple cause that could have been mitigated with modest changes in practices.

⁵² SCE, Coyne, Tr. 718:10-18.

⁵³ Cal. Pub. Util. Code § 451.1(c).

⁵⁴ Cal. Pub. Util. Code § 451.1(c).

⁵⁵ Cal. Pub. Util. Code § 451.1(b).

⁵⁶ SDG&E, Folkmann, Tr. 805:4-16.

⁵⁷ SDG&E, Folkmann, Tr. 808:27 to 809:23.

⁵⁸ PG&E/SCE, Graves, Tr. 494:7-16. See also, Graves, Tr. 493:25 to 494:6 (“I think it’s very likely that all the utilities will be found periodically to have been inadequately prepared for fire outcomes, and they will [] -- have disallowances. Largely because there aren’t any prevailing standards in place that are clear and tested and proven in a way where a utility could, before the fact, arrange their operations to be very unlikely to face those chances.”).

- There are no stated or agreed metrics of success to diagnose good faith performance.
- There is no single legal or regulatory setting in which wildfire responsibility will be resolved completely. Different cases, sometimes in different venues, may reach different conclusions⁵⁹

The uncertainty inherent in the way the prudence standard will be interpreted and implemented thus presents a major risk perceived by investors. As a policy matter, this remaining risk to investors for wildfires needs to be accounted for in the adopted ROE.

3. Inverse condemnation is a unique risk for California utilities

The risk to utilities of inverse condemnation is unique to California.⁶⁰ AB 1054 did not address inverse condemnation, leaving the doctrine intact.⁶¹ Thus, inverse condemnation remains a clear and distinct risk to California utilities.

Intervenor experts agree that inverse condemnation warrants an upward adjustment in the authorized ROE. Mr. Gorman, for EPUC/IS/TURN, allows an approximate 65 basis point addition.⁶² Mr. O'Donnell proposed an additional 75 basis points.⁶³ Although Messrs. Gorman and O'Donnell's adjustments are inadequate, overall, to capture the impact of wildfire risk and inverse condemnation, these intervenor proposals clearly establish that results from the standard ROE modeling need to be adjusted upward by almost 1 percent on a policy basis, to provide compensation to investors for putting their funds into California utilities.

D. Returns on gas vs. electric utility investments

A policy question in this proceeding is whether investment in gas utility operations should have a different ROE than investment in electric utility operations. While no party actually proposed a ROE number for gas investments that was different from electric investments, one party argued that the ROE for gas investments should be set lower than that for

⁵⁹ Ex. PG&E-04, p. 2, line 21 to p. 4, line 4; *accord*, Ex. IEI-01, p. 16, line 24 to p. 17, line 4, citing the Tubbs fire.

⁶⁰ *See, e.g.*, FEA, O'Donnell, Tr. 360:14-17 (“[W]e don’t have inverse condemnation in North Carolina or, quite frankly, in any other state that I’m aware of.”).

⁶¹ FEA, O'Donnell, Tr. 361:3-6.

⁶² Ex. EPUC/IS/TURN-01, p. II-8, lines 1-2.

⁶³ FEA, O'Donnell, Tr. 359:20 to 360:25.

electric investments.⁶⁴ That party, EDF, urges the Commission to use ROE as a tool to disincentive investment in the gas distribution facilities, “The authorized ROE for the utilities’ gas operations should reflect incentive for *reduced investment* and eventual decommissioning of the natural gas distribution system”⁶⁵

EDF’s idea is contrary to the purpose of a ROE proceeding. As SoCalGas witness Folkmann points out, this proceeding is “to determine a return that is reasonably sufficient to instill confidence in the financial soundness of the utility; commensurate with returns available on alternate investments of comparable risk”⁶⁶ PG&E and SoCalGas have continuing responsibility for the safe, reliable operation of their gas systems, and must continue investing in their gas infrastructures to do so. Adopting a lower ROE as an incentive to reduce investment would be contrary to the purpose and scope of a cost of capital case.⁶⁷ Indeed, EDF’s proposal fails to recognize that maintaining safe and reliable service on the gas system requires capital, for which investors should receive a fair return.

Moreover, as a combined gas and electric utility, PG&E’s investors are exposed to risks on a utility enterprise-wide basis. That is, funds from gas operations may end up supporting costs on the electric side, and vice versa. For example, Senate Bill (SB) 901, does not limit analysis of what shareholders should bear based on whether the problem emanated from the gas or electric operations, but instead looks to the company as a whole for liability. Similarly, the ROE for PG&E should not differentiate between its gas and electric utility businesses. It should be set to fairly compensate investors for the risk of the utility as a whole.

III. RETURN ON EQUITY

This section discusses the models, inputs, data, assumptions and analyses for the ROE

⁶⁴ Ex. EDF-01, p. 2, line 7 to p. 3, line 9.

⁶⁵ Ex. EDF-01, p. 32, lines 8-10 (emphasis added).

⁶⁶ Ex. SCG-07, p. 5, lines 8-10.

⁶⁷ Like SoCalGas, PG&E does agree that California’s efforts to decarbonize energy use cited by EDF increases risk, i.e., decreased natural gas use and potential stranded costs. But trying to turn the 2020 ROE into a disincentive for attraction of capital for gas system investment is beyond the scope of this case.

proposals in this case. We also review the development of PG&E's estimated quantification of the slice of wildfire risk which remains with investors under AB 1054, and the numerical impact on the 2020 ROE.

The details of ROE modeling are important to the parties. PG&E recommends its modeling and analytical results to the Commission because they incorporate the most appropriate assumptions and inputs into the models. The results are the most reasonable estimates of investors' required return on equity. PG&E is mindful of the Commission's general approach to setting ROE, which treats models only as helpful gauges of the realm of reasonableness.

From the results of these broad financial models which are dependent on subjective inputs, the parties advance arguments in support of their respective analyses and in criticism of the input assumptions used by other parties. These arguments will not be addressed extensively in this opinion, since they do not materially alter the modeling results. However, it should be noted that none of the parties agreed with the financial modeling results of the others.

In the final analysis, it is the application of informed judgment, not the precision of financial models, which is the key to selecting a specific ROE estimate. We affirmed this view in D.89-10-031, noting that it is apparent that all these models have flaws and, as we have routinely stated in past decisions, the models should not be used rigidly or as definitive proxies for the determination of the investor-required ROE.⁶⁸

In this case, the Commission will be judging among a wider than usual span of ROE numbers, from a low of 7.11 percent (Del Monte) to a high of 15.2 percent (IEI). Cal Advocates' proposal, 8.49 percent, is almost 2 full percentage points below PG&E's currently authorized ROE of 10.25 percent. EPUC/IS/TURN proposes 9.65 percent and FEA proposes 9.75 percent, both significantly below the current ROE. In effect, these ROE proposals imply that the risk and required return today is less than it was several years ago, before the 2017 and 2018 wildfires occurred. That is not believable, as SCE witness Stern testified.⁶⁹

Moreover, the July 22, 2019 Regulatory Research Associates (RRA) report on authorized ROE decisions indicated an average ROE for all electric utility rate cases so far in 2019 is 9.66

⁶⁸ D.12-12-034, *mimeo*, p. 28.

⁶⁹ SCE, Stern, Tr. 177:22 to 178:20.

percent.⁷⁰ The ROE proposals of Cal Advocates, EPUC/IS/TURN and Del Monte would be below even the average, i.e., in the bottom half of 2019 decisions, while FEA's proposal approximates the average.⁷¹ Even based on years 2007-2018, the recommendations from Cal Advocates and all the intervenors except FEA and IEI, are below the averages and mean allowed by other regulators throughout the country.^{72 73} These proposed ROEs are not reasonable, since investors perceive California as a much riskier state for electric utilities than other states.⁷⁴

With these perspectives, modeling that produces results as low as Cal Advocates and other intervenors, is highly questionable. Thus, the Commission should give no weight to the ROE modeling results presented by Cal Advocates, EPUC/IS/TURN, FEA and Del Monte.

A. ROE modeling discussion: comparable group, models, inputs, assumption, risk free rate (.2 drop), market risk premium, geometric vs. arithmetic

The Commission is well aware of the dependency of financial models on subjective inputs, and the arguments that ricochet among parties over analytical methods and input assumptions. In D.12-12-034, the Commission states “[t]hese arguments will not be addressed extensively in this opinion, since they do not materially alter the modeling results.”⁷⁵ Although the arguments over methodology, assumptions and inputs do materially alter modeling results, given the detailed and technical issues in modeling, it is understandable why the Commission prefers to apply judgment to determine the final result, rather than picking among the different technical details involved.

What is important here to recognize is that witnesses for Cal Advocates and intervenors implement the models in ways that result in downward-biased estimates of the cost of capital and

⁷⁰ SDG&E, Rothschild, Tr. 637:13 to 638:15.

⁷¹ For this discussion, EPUC/IS/TURN's proposal without the additional basis points for inverse condemnation is used.

⁷² Ex. PG&E-03, p. 1-3, lines 8-11, and p. 1-6, Table 2.

⁷³ FEA recommends a 9.75% ROE (Ex. FEA-01R); IEI recommends a 15.2% ROE (Ex. IEI-01, p. 7, lines 3-4).

⁷⁴ IEI, Hern, Tr. 613:19 to 619:20; Ex. IEI-01, p. 13, line 18 to p. 18, line 12; FEA, O'Donnell, Tr. 360:11-22; FEA recognizes inverse condemnation as a unique risk to California utilities, Ex. FEA-02, p. 31, line 24 to p. 32, line 15.

⁷⁵ D.12-12-034, *mimeo*, p. 28.

do not represent “best practices” for estimating the cost of capital.⁷⁶ This situation is apparent in the table below which summarizes the modeling results for PG&E, Cal Advocates and intervenors, by model.

Parties ROE Results By Model Type

Party / Witness	DCF	CAPM	ECAPM	HRP
PG&E / Vilbert	8.2% - 11.3%	8.3% - 10.3%	8.5% - 10.7%	10.2% - 10.7%
PAO	7.3% - 9.0%	6.8% - 9.3%	n/a	n/a
EPUC	7.6% - 10.6%	7.0% - 8.5%	n/a	7.6% - 10.4%
FEA	6.9% - 9.0%	5.4% - 6.5%	n/a	n/a
Del Monte	n/a	6.1% - 6.6%	6.7% - 7.0%	n/a

PG&E witness Vilbert arrived at his recommended 11 percent ROE based on detailed ROE modeling that did not include any wildfire premium, as presented in Chapter 2 of Exhibit PG&E-01.⁷⁷ He defends his work and critiques the problems with Cal Advocates and other intervenor ROE witnesses in his rebuttal testimony, Chapter 1 of Exhibit PG&E-03. The following discussion in this brief summarizes PG&E’s positions on these ROE issues.⁷⁸

1. Dr. Vilbert’s comparable groups are appropriate for gauging the risk that PG&E investors face in California’s environment with higher risks than the typical regulated utility

Several of the cost of capital cost estimation models require data for companies of comparable risk to the company being analyzed (sample selection). Typical sample selection criteria require a sample of investment grade, dividend paying companies in the same line of business as the company being studied. Currently PG&E is below investment grade and not paying dividends, so the typical sample is definitely not of comparable risk to PG&E.⁷⁹ Due to

⁷⁶ Ex. PG&E-03, p. 1-4, line 26 to p. 1-5, line 1. The statement does not apply to IEI witness Hern.

⁷⁷ Ex. PG&E-02, p. 2-2, lines 4-7; Ex. PG&E-01, p. 2-9, lines 11-12.

⁷⁸ For more comprehensive treatment of these issues, see Dr. Vilbert’s prepared, supplemental, rebuttal and verbal testimony.

⁷⁹ Ex. PG&E-01, p. 2-8, lines 11-18.

this complication, Dr. Vilbert analyzed market data for companies in capital intensive, network industries (CINI), and provided ROE estimates for subsets of the CINI Sample: regulated electric utilities (Electric Utility Sample); regulated water and gas local distribution utilities (Water and Gas Sample); non-electric utilities (Regulated Utility Sample); and, a non-regulated group (Non-Regulated Sample) of CINI companies.⁸⁰ As a result, the CINI Sample includes all the companies that would normally be included in a standard electric utility sample group, but also includes companies from other regulated and non-regulated industries. Inclusion of the additional companies is necessary due to PG&E's higher risk as a non-investment grade, non-dividend paying company.

EPUC/IS/TURN witness Gorman objected to Dr. Vilbert's use of the CINI sample on grounds that it does not develop proxy groups with risks comparable to regulated utility companies.⁸¹ Mr. Gorman's criticism ignores the fact that PG&E is in a different situation than typical regulated utility companies. In addition, the Regulated Utility Sample in the CINI are regulated and have an average beta of 0.73, which is close to the 0.70 average utility beta that Mr. Gorman uses. Dr. Vilbert's analyses with CINI companies provides relevant information for the Commission's consideration, given PG&E's situation.

Del Monte witness Knecht uses the universe of *Value Line*'s electric and gas utilities as his sample, and declines to remove merged, bankrupt or dividend-omitting companies. In failing to do so, Mr. Knecht disregards the instructions of the Commission. The Commission has directed:

Value Line Investment Survey electric industry classification shall continue to be used in return on equity proceedings where financial models require the use of a proxy group. *Three basic screens shall be used in selecting a comparable proxy group. Those screens are to exclude companies that do not have investment grade credit ratings, exclude companies that do not have a history of paying dividends and exclude companies*

⁸⁰ Ex. PG&E-01, p. 2-9, lines 18-28. Initially, Dr. Vilbert also used a Sample Group from the Safety Ranking 5 from *Value Line* (VL 5). However, PG&E ended up in Safety Ranking 4, so Dr. Vilbert removed the VL 5 analysis, which did not change his recommendation for PG&E. (Ex. PG&E-02, p. 2-2, fn. 6.)

⁸¹ Ex. PG&E-03, p. 1-12, lines 12-22.

undergoing a restructure or merger. Additional screens may be used to the extent that justification is provided.⁸²

The reason for this directive is that the ROE estimates from such companies can be unduly high or low because their ROE estimates can be driven by these atypical characteristics rather than their actual cost of capital.⁸³ Mr. Knecht thus makes a serious error in refusing to vet his sample group. His cost estimation methods that use his *Value Line* universe, should not be given any serious consideration.

Except for Mr. Knecht and Mr. Gorman's criticism of some CINI companies, the intervenors generally did not object to Dr. Vilbert's comparable groups. There are some differences of opinion about a few individual companies' inclusion or exclusion, i.e., Unitil, Chesapeake Utilities, and Avangrid. However, Dr. Vilbert's inclusion of them is appropriate because the relevant data is available for each of these companies.⁸⁴

2. The Capital Asset Pricing Model

CAPM is a risk positioning model defined through the following equation:

$$R = RFR + \beta \times MRP$$

Where:

- **r** is the estimated cost of equity.
- **RFR** is the risk-free rate.
- **β** is the estimated equity beta, and
- **MRP** is the market risk premium.

Intervenor witnesses using the CAPM generally use the same representation, but employ different inputs, and interpret the results differently.

a. The risk-free rate in the CAPM model

The risk-free rates are summarized in the table below:

⁸² D.12-12-034, *mimeo*, p. 53, OP 5 (emphasis added).

⁸³ Ex. PG&E-03, p. 1-11, line 3 to p. 1-12, line 7.

⁸⁴ Ex. PG&E-03, p. 1-9, line 14 to p. 1-10, line 12.

COMPARISON OF RISK-FREE RATE INPUTS⁸⁵

	Vilbert (PG&E)	Intervenors			
		Gorman (EPUC/IS/TURN)	O'Donnell (FEA)	Rothschild (PAO)	Knecht (Del Monte)
Scenario 1	4.40%	2.80%	2.53%	2.12%	2.34%
Scenario 2	4.15%	-	3.46%	2.20%	-

For the risk-free rate, the different intervenors have made different errors. Mr. Gorman's forecasted risk-free rate represents a projected 30-year Treasury bond yield, but he does not account for the current elevated yield spreads, which are elevated by 36 to 46 basis points—thus understating what the going-forward risk-free rate likely will be. Mr. O'Donnell and Mr. Rothschild use historical values which is inappropriate since the risk-free rate is needed for the forward-looking period. Mr. Rothschild further errs in using a 3-month U.S. Treasury rate, which is far too short for a reasonable time horizon for investments in a utility.⁸⁶ The risk-free rate needs to be based on long-term Treasuries.⁸⁷

Dr. McCann's use of the interest rate of the Metropolitan Water District of Southern California, is completely inappropriate because the risk-free rate is meant to be the yield on a riskless asset in the U.S. and is not specific to a location or company. Mr. Knecht's risk-free rate is not a projection of the yield when rates will be in effect, and therefore is inappropriate.⁸⁸

Dr. Vilbert's risk-free rate for the 2020 forecast period does not contain these errors. Dr. Vilbert used the risk-free rate based on Blue Chip's 2020 forecast of 3.6 percent for a 10-year Treasury bond plus 30 basis points maturity premium as calculated in Workpaper #2 to Schedule D5.9, Panel C: Maturity Premium Graph and Calculations (Using Annual Series Data)⁸⁹, to produce the forecast yield on a 20-year Treasury bond. He then added 50 basis points for the downward pressure on Treasury yields as displayed in Table 2-5. Thus, his risk-free rate for

⁸⁵ Ex. PG&E-03, p. 1-14, Table 3.

⁸⁶ Ex. PG&E-03, p. 1-14, line 7 to p. 1-16, line 25.

⁸⁷ Ex. PG&E-03, p. 1-16, lines 23-25; D.07-12-049, *mimeo*, p. 16.

⁸⁸ Ex. PG&E-03, p. 1-16, line 26 to p. 1-17, line 9.

⁸⁹ Ex. PG&E-01, Chapter 2, Attachment 3, p. 2-Atch3-104.

scenario 1 is 4.4 percent, and 4.15 percent for scenario 2. Since Dr Vilbert developed his testimony, forecasts are down approximately 20 basis points, which would compare to the 3.6 percent forecast, not the 4.4 percent. Dr. Vilbert noted that if he redid the analysis, they could be somewhat lower. However, he pointed out that the market risk premium is generally inversely related to the risk-free rate, “so if the market risk premium goes up and the interest rate goes down, you have an offsetting effect.”⁹⁰ On balance, Dr. Vilbert’s risk-free rate is the more robust estimate for the test period.

b. The Beta inputs for the CAPM model

All expert witnesses who conducted ROE modeling used *Value Line* betas. However, the three intervenor witnesses fail to recognize that *Value Line* betas are levered equity betas that reflect the market value capital structures of the companies for which they are estimate. Consequently, they have been adjusted for differences in financial risk in the market capital structures of their companies. Therefore, to be consistent with the *Value Line* betas, adjustments need to be made to recognize differences in the financial risk among the sample companies, as discussed below in Section III. D.

c. The Market Risk Premium for use in the CAPM

The various parties recommended different risk premiums, (Market Risk Premiums, or MRP) as shown in the table below.⁹¹

COMPARISON OF MARKET RISK PREMIUM INPUTS

	Vilbert (PG&E)	Intervenors			
		Gorman (EPUC/IS/TURN)	O'Donnell (FEA)	Rothschild (PAO)	Knecht (Del Monte)
Scenario 1	7.07%	6.00%	4.00%	6.99%	6.12%
Scenario 2	8.07%	8.20%	6.00%	9.47%	-

⁹⁰ PG&E, Vilbert, Tr. 579:18-26.

⁹¹ Ex. PG&E-03, Table 5, p. 1-19.

The MRP is the risk premium over the risk-free rate. That relationship is strongly impacted by the risk-free rate used for the analysis. There are numerous problems with several of the intervenors' risk-free rate in this context, as Dr. Vilbert explained. For instance, both Mr. Gorman, Mr. O'Donnell and Mr. Knecht use the total return on long-term Treasury bonds for their calculations.⁹² That is wrong because only the income returns, i.e., the cash payments associated with government bonds on an annual return basis, are risk-free. Total returns on long-term government bonds include capital appreciation returns resulting from interest rate and currency fluctuations, which are not risk free. Only income returns accurately reflect the risk-free rate of interest.⁹³

Mr. O'Donnell also uses a geometric measure for his MRP, which biases estimates of future returns downward.⁹⁴ This is because they represent the average of a single ex-post realization of the distribution of possible ex-ante expected returns, and do not account for year-to-year variation around the expected value. As Dr. Vilbert states, "[t]he arithmetic mean is the appropriate parameter because it is a better measure of expectations about the future in the statistical sense of a probability-weighted average over possible future returns."⁹⁵ This is an additional reason for rejecting the geometric measure of MRP considered by Mr. O'Donnell.

Dr. Vilbert would typically consider an MRP of 7 percent over the long term-bond rate as reasonable based on his review of the relevant academic literature. However, current market conditions, as reflected in elevated bond yield spreads as described in opening testimony suggest that a value of 7.5 percent or even 8.5 percent could be appropriate currently. To remain conservative, he included two analyses using an MRP of 7.07 and 8.07 percent.⁹⁶ Dr. Vilbert's analysis and use of the increase in the yield spread between risk-free government debt and utility debt of comparable maturity is discussed in detail in Ex. PG&E-01, pages 2-32 to 2-44. The

⁹² Ex. PG&E-03, p. 1-19, lines 15-16; p. 1-20, lines 5-8; and, p. 1-21, lines 3-9.

⁹³ Ex. PG&E-03, p. 1-21, line 24 to p. 1-22, line 5.

⁹⁴ Ex. PG&E-03, p. 1-24, lines 10-11.

⁹⁵ Ex. PG&E-03, p. 1-22, line 8 to p. 1-23, line 10.

⁹⁶ Ex. PG&E-01, p. 2-59, line 32 to p. 2-60, line 6.

information indicates a 100 basis point increase in the MRP resents a reasonable span for potential of the adjustments.⁹⁷ The Commission should accept Dr. Vilbert's MRP estimates.

3. The ECAPM corrects for empirically observed underestimation of the ROE for companies with Betas less than 1, and should be used to determine the ROE in this case

Consistent empirical observation has established that the base CAPM model tends to underestimate the return on equity for stocks with betas below one and tends to overestimate the return on equity for stocks with betas above one.⁹⁸ Dr. Vilbert considered ECAPM modeling results, but several intervenors take the position that ECAPM should not be used with adjusted betas. The intervenors are incorrect because ECAPM and adjusted betas are two separate corrections to CAPM.⁹⁹ Dr. Vilbert's illustration of the empirical security market line (SML) demonstrates that the adjustment to beta corrects the estimate of the relative risk of the company, i.e., as measured along the horizontal axis of the SML. Whereas the ECAPM adjusts the risk-return tradeoff, i.e., the slope of the SML, which is on the vertical axis. One of these corrections does not adjust for the other.¹⁰⁰ Furthermore, the beta adjustment transforms a historical beta into a better estimate of expected future beta.¹⁰¹ The intervenors criticism of Dr. Vilbert's use of ECAPM and its results are misplaced and should be rejected.

4. The Risk Premium Model

The risk premium model determines the risk premium over and above a risk-free rate, or a bond yield, that investors in other regulated companies have access to and use the information to derive a cost of equity using the expected/forecasted risk-free rate or bond yield at the time the rates go into effect. Most important, it is the only model that directly compares the allowed return for regulated utilities to one calculated for PG&E, rather than holding companies.¹⁰² Dr.

⁹⁷ Ex. PG&E-01, p. 2-44, lines 7-9.

⁹⁸ Ex. PG&E-01, p. 2-61, line 7 to p. 2-63, line 16; Ex. PG&E-03, p. 1-26, lines 3-10.

⁹⁹ Ex. PG&E-03, p. 1-27, lines 12-22.

¹⁰⁰ Ex. PG&E-03, p. 1-20, lines 3-13.

¹⁰¹ Ex. PG&E-03, p. 1-30, lines 1-7.

¹⁰² Ex. PG&E-03, p. 1-32, lines 10-18.

Vilbert's risk premium model analysis is described in detail in Ex. PG&E-01, pages 2-66 to 2-68, and uses his estimated inverse relationship between historically allowed risk premium and interest rates using regression analysis. Mr. Gorman criticized Dr. Vilbert's analysis as "simplistic."¹⁰³ However, Dr. Vilbert's work is more sophisticated than Mr. Gorman's suggestion to use a risk premium of 6.0 percent plus a forecasted yield of 2.6 percent, which fails to recognize the inverse relationship between the risk premium and the risk-free rate.¹⁰⁴ The Commission should reject Mr. Gorman's position, and accept Dr. Vilbert's.

5. The DCF Model

The discounted cash flow model, or DCF, is generally specified as follows.

$$r = \frac{D_1}{P_0} + g = \frac{D_0}{P_0} \times (1 + g) + g$$

Where r = the cost of equity
Po = the current market price of equity
D₁ = the next expected dividend, and
G = the growth rate of dividends.

This model indicates that the cost of capital equals the expected dividend yield plus the (perpetual) expected future growth rate of dividends. This is the "simple" or "constant growth" DCF model. It relies on strong assumptions, but there are issues among the expert witnesses about how to estimate each of these parameters, as well as whether to use an annual or quarterly version of the model.¹⁰⁵

a. Developing the Stock Price for DCF modeling

The first question is how to estimate the stock price. Mr. Rothschild and Mr. Knecht used a single day's stock price, while Mr. Gorman use a 13-week period. Using a single day is inappropriate because market prices can change dramatically in one day, such that the price on one day is not representative of investors' expectations. Using too long a period such as Mr. Gorman's 13-week period, is not best practice, because more than one dividend payment may

¹⁰³ Ex. EPUC/IS/TURN-01, p. VI-56, line 6.

¹⁰⁴ Ex. PG&E-03, p. 1-32, line 23 to p. 1-33, line 6.

¹⁰⁵ Ex. PG&E-03, p. 1-33, lines 13-20; Ex. PG&E-01, p. 2-69, line 22 to p. 2-70, line 23.

have been made during the 13 weeks, which would affect the stock price in a manner inconsistent with the model's assumptions. Furthermore, the longer period weakens the forward-looking nature of the DCF model. Dr. Vilbert recommends using 15 trading days, or 3 weeks, as the best compromise. It is long enough to average out daily fluctuation, but not so long as to weaken the forward-looking strength of the DCF model.¹⁰⁶

b. The Annual Versus Quarterly DCF Model

Messrs. Gorman, Rothschild, O'Donnell and Dr. McCann all use the annual version of the model and, in doing so, introduce problems into their analysis. Mr. Knecht estimates the 3rd stage of the model using 400 years of calculations, which is unnecessary and theoretically incorrect, because the growth rate is assumed to be constant in the 3rd stage. Mr. Gorman makes the same mistake in his use of 200 years of constant growth.¹⁰⁷ Mr. Rothschild approximates the dividend growth by using only one-half of the forecast short-term growth rate in the dividend yield to adjust for the payments of dividends quarterly, but this is imprecise and can be avoided by using a quarterly version of the DCF model. And Mr. O'Donnell's position that the dividend adjustment is necessary misses the point that the quarterly DCF model does not need that adjustment. Dr. Vilbert uses the quarterly DCF model because it matches more accurately the actual payment of dividends and removes the need for approximation as compared to the annual DCF model.¹⁰⁸

c. Estimating the Growth Rate of Dividends per Share

Estimating the growth rate of dividends is one of the most challenging and controversial aspects of implementing the DCF model. There are three ways to do this: 1) use the U.S. average historical growth rates; 2) rely on forecasts of earnings per share (EPS) growth rates by financial analysts; and, 3) calculate the sustainable growth rate.¹⁰⁹ The question is which

¹⁰⁶ Ex. PG&E-03, p. 1-34, line 3 to p. 1-35, line 9. Mr. O'Donnell used dividend yields that did not match the yields in the source he identified, *Value Line*. So, his analysis is not transparent or amenable to verification. (Ex. PG&E-03, p. 1-35, lines 10-11.)

¹⁰⁷ Ex. PG&E-03, p. 1-35, lines 1-12.

¹⁰⁸ Ex. PG&E-03, p. 1-35, lines 25-27; p. 1-36, line 19 to p. 1-37, line 3.

¹⁰⁹ Ex. PG&E-03, p. 1-37, lines 14-19. In the constant growth DCF model, DPS, EPS and the stock

method is best.

Mr. Rothschild, Mr. Gorman and Mr. O'Donnell use the sustainable growth method to estimate the dividend growth rate. The biggest weakness of this method is that it requires an estimate of the ROE the company expects to earn on its book value of equity as an input. This assumption is not robust if the estimated cost of equity for the company is not the same as the expected ROE on book equity. For example, in Mr. Rothschild's analysis, if the company is authorized an allowed ROE of 8.49 percent on its book value, it is illogical to expect the utility to earn 10.50 percent book return on equity, which is what Mr. Rothschild uses to estimate the sustainable growth rate. That is a fundamental inconsistency in Mr. Rothschild's DCF model assumptions and its application to regulated utilities. Mr. Gorman and Mr. O'Donnell also use the sustainable growth method, but they do not establish that the estimated cost of equity will be the same as the ROE expected to be earned on the book value of equity.

Mr. Rothschild also uses the 2018 earned return on equity, but that assumes 2018 is representative of the future.¹¹⁰ His approach is flawed and should be rejected.

In contrast to intervenor and Cal Advocates experts who use a variety of methods, the growth rate use by the utility experts, Drs. Vilbert, Villadsen and Morin, rely upon earning per share (EPS) forecasts from financial analysts. The constant growth phase of the DCF model assumes dividends, EPS, book value, and stock prices grow at the same constant rate. Thus, since dividends are paid from earnings, dividends per share (DPS) cannot grow at a different rate than EPS.¹¹¹ And the EPS needs to be forward-looking because the DCF is a forward looking model where the future can be different from the past.¹¹² The financial analysts estimates reflect the information currently available in the market. If there is concern about research analyst optimism, research demonstrates that analyst optimism bias is only a concern for stocks that are more difficult to value, such as smaller firms, high volatility or turnover, and younger firms.

¹¹⁰ price are all assumed to grow at the same constant rate.

¹¹¹ Ex. PG&E-03, p. 1-40, line 1 to p. 1-41, line 17.

¹¹² Ex. PG&E-03, p. 1-42, lines 19-27.

¹¹² Ex. PG&E-03, p. 1-42, lines 28-29.

These characteristics do not describe utilities. So research analysts' EPS forecasts are the appropriate source for growth rates to be used for DCF modeling, as Dr. Vilbert has done.

d. The Multi-stage DCF model and its different growth rates

The multi-stage DCF model requires a growth rate for the near-term five years, a smoothing pattern for several following years, and a long-term growth rate afterwards.¹¹³ It requires modeling growth patterns for multiple stages, which is an added complication over the simple DCF model. Mr. Gorman, Mr. Rothschild and Mr. Knecht employ multi-stage DCF modeling, with differing growth rates.

Mr. Rothchild violates one of the multi-stage DCF model's core assumptions. This model requires a constant terminal growth rate for the last stage. For reasons explained in Dr. Vilbert's rebuttal, analysts assume the terminal growth rate is equal to GDP in the long term.¹¹⁴ Mr. Rothchild's multi-stage DCF model completely ignores this critical assumption. Instead, he calculates yields implying terminal growth rates ranging from around 2 to 13 percent—far greater than the forecast growth of GDP growth for the economy of 4 to 4.5 percent. And he provides no explanation for why the terminal growth rates for his sample companies could vary so dramatically from the forecast of GDP growth for the economy.¹¹⁵ Mr. Knecht uses an estimate of the growth in population to adjust his estimate of the long-term growth rate. A population-based adjustment is unrelated to the issue of the DPS growth rate. Mr. Knecht's method is totally foreign to Dr. Vilbert and Mr. Gorman's similar multi-state DCF analyses.

For the reasons discussed here and in Dr. Vilbert's rebuttal on the multi-stage DCF model, Mr. Rothschild and Mr. Knecht's approaches and results for this model must be rejected. Dr. Vilbert's and Mr. Gorman's multi-stage DCF modeling are robust.

6. Comparable earnings, or historical earned returns, are inappropriate for determining the 2020 test year ROE

Mr. O'Donnell reports several types of comparable earnings: 1) historical earned returns

¹¹³ Ex. PG&E-01, p. 2-71, line 10 to p. 2-72, line 11.

¹¹⁴ Ex. PG&E-03, p. 1-44, line 24 to p. 1-45, line 20.

¹¹⁵ *Ibid.*

on book value for the sample companies (historical earned returns), and 2) ROEs allowed by regulators from 2003 through 2018 for electric utilities (allowed returns). Historical earned returns are accounting returns. That information is accounting information, instead of market information, and is not forward looking. It sets allowed ROEs based on historical accounting returns, which themselves are based on ROEs allowed in the past. Thus, it is circular for regulated companies because the accounting results of regulatorily allowed return become the basis for setting the ROE to be allowed.¹¹⁶ With respect to Mr. O'Donnell's 15 years of allowed ROEs, they are not market pricing data, or even earned ROEs, and are not appropriate for selecting the forward looking ROE. Dr. Vilbert is correct when stating that the allowed ROEs reported by Mr. O'Donnell is only useful for understanding that the PAO and intervenor ROE recommendations below the average for 2018 allowed by other regulators, implies that California electric utilities have less risk than the average utility in the U.S., which is not a credible conclusion.¹¹⁷

B. Wildfire residual risk modeling results should be included in the ROE determined in this proceeding

PG&E witnesses Graves and Mudge present their analysis of PG&E wildfire liability costs and coverage gaps once the AB 1054 Wildfire Fund is in place, assuming PG&E participation, in Exhibit PG&E-02.¹¹⁸ Their supplemental testimony updates their report in Exhibit PG&E-01, Chapter 3, to reflect key provisions of AB 1054 that have implications for the extent of wildfire risk affecting utilities in California generally and PG&E specifically. They analyze the residual risks as a result of "coverage gaps" arising from the size and rules for the use of the AB 1054 Wildfire Fund. They identify two primary sources of exposure; 1) coverage risk due to cap exposure; and 2) the likely adequacy of the fund relative to publicly available indicia of wildfire risk statewide, (Fund shortfall exposure), based on its size and key provisions.

The Brattle report attached to Exhibit PG&E-02, Attachment 1, pages 3-Atch1-1 to 3-

¹¹⁶ Ex. PG&E-03, p. 1-46, line 30 to p. 1-47, line 12.

¹¹⁷ Ex. PG&E-03, p. 1-48, lines 3-9.

¹¹⁸ Ex. PG&E-03, p. 1-44, lines 14-22.

Atch1-17, presents several layers of costs that PG&E could face under different conditions. The cap exposure is PG&E's exposure to Fund reimbursement obligations, as summarized at pages 3-Atch1-15 to 3-Atch1-16 of that exhibit. It is exposure in the event the utility's fire management conduct is found to not justify assigning full cost responsibility to ratepayers, but it is not a "backdoor" means of being fully compensated for past or projected future disallowance costs. They are going-forward amounts based on statistical exposure to distributions of possible wildfire cost variability. Moreover, they are not requested to cover potential costs of future wildfires, but for the insurance costs of being exposed to the full range of potential losses.¹¹⁹ For PG&E, Messrs. Graves and Mudge estimate these could create statistically expected annual exposure ranging from approximately \$50 million to \$140 million per year, corresponding to incremental ROE levels of 25 to 72 basis points.¹²⁰

The potential Fund shortfall analysis is summarized in pages 3-Atch1-16 to 3-Atch1-17 of Exhibit PG&E-02. Notwithstanding the Wildfire Fund's substantial size, there is a significant risk that the Fund could be inadequate to cover wildfire risk over all the participating utilities' service territories. From the perspective of statistical expectation, there are scenarios in which damage claims would outstrip Fund balances, even potentially in the near term. At that point, lacking any further action by the state the liabilities for wildfire and inverse condemnation would fall back on the utilities.¹²¹ Messrs. Graves and Mudge estimate the insurance cost of bearing the statistically expected exposure to potential Fund shortfall at \$8 million to \$360 million per year, corresponding to an incremental ROE range of 4 to 180 basis points.¹²²

The cap exposure and the potential Fund shortfall coverage gaps are additive, and the overall range can be considered as 30 basis points to approximately 150 basis points.¹²³ This informed PG&E witness Bijur's testimony reducing PG&E's requested ROE in this case to 12

¹¹⁹ Ex. PG&E-04, p. 7, line 23 to p. 8, line 12.

¹²⁰ Ex. PG&E-02, p. 3-3, lines 5-9.

¹²¹ Ex. PG&E-02, Chapter 3, Attachment 1, p. 3-Atch1-10.

¹²² Ex. PG&E-02, p. 3-3, lines 9-15.

¹²³ Ex. PG&E-02, Chapter 3, Attachment 1, p. 3-Atch1-17.

percent, assuming PG&E satisfies the eligibility requirements for participation in the Wildfire Fund, PG&E has adequate insurance coverage for non-eligible claims, and the Wildfire Fund functions as expected.¹²⁴

C. The Market-to-Book Ratio is irrelevant and inappropriate for determining the ROE for test year 2020

The market-to-book (MB) ratio is the ratio of the market price of a share of stock to its book value.¹²⁵ Several of the intervenors' testimonies claim or imply that a MB ratio greater than 1.0 is evidence that regulators have allowed ROEs greater than the cost of capital.¹²⁶ The underlying premise behind the intervenors' claim is that investors can only, over time, receive cash flows that, on a present value basis, equal the book value of the utility's assets, since only the book value of a utility's assets can be recovered and returned to investors.¹²⁷ Intervenors assert that a MB ratio greater than 1.0 means investors expect to earn more than the return they require to purchase the utility stock.¹²⁸

EDF claims "The Commission generally is targeting to set the ROE so that the book and market values of the utility company are roughly comparable."¹²⁹ Thus, for a utility with a MB ratio greater than 1, EDF would have the Commission continually lower the ROE until the stock price has fallen to the point where the stock price per share is about equal to the book value per share.¹³⁰

There are several reasons why the MB ratio is not an indication that the allowed ROEs have been set higher than the cost of capital. First, market prices can only be observed for utility holding companies, not the subsidiary utilities. To the extent the utility holding company has

¹²⁴ Ex. PG&E-02, p. 1-5, line 21 to p. 1-6, line 2.

¹²⁵ Ex. PG&E-03, p. 1-50, lines 19-20.

¹²⁶ Ex. EDF-01, p. 12, lines 5-13; Ex. Cal Advocates-01, p. 96, lines 15-21; Ex. FEA-01, p. 89, lines 1-17.

¹²⁷ Ex. PG&E-03, p. 1-51, lines 1-9.

¹²⁸ Ex. Cal Advocates-01, p. 89, lines 21-24.

¹²⁹ Ex. EDF-01, p. 5, lines 5-6.

¹³⁰ The book value per share is the common equity on the utility's SEC books divided by the number of common shares outstanding. The market price per share is the price of the utility's stock observed in the market.

subsidiaries, the MB ratio reflects the ability of its subsidiaries to earn more than their cost of capital, and as result, the MB concept would only be relevant to a single, publicly traded utility of which all the assets are rate of return regulated on an original cost basis.¹³¹ But for such utilities, since MB ratios for regulated companies have exceeded 1.0 for a long time, it would mean that all the regulatory commissions in the U.S. are setting the allowed ROE much higher than what investors actually require to purchase the utility stocks, a proposition that is not plausible since regulators try to set the return at just the amount that investors require.¹³²

If the MB claim were true, then market prices should move in lock step with book values, but they do not.¹³³ As PG&E witness Vilbert explains, “[I]t is well known that any attempt at targeting the MB ratio is circular. If investors believed that a commission was attempting to target a MB ratio of 1.0, the ratio would not deviate from 1.0 because investors would know that the commission would alter the allowed ROE if it did deviate. Under that policy, the MB would provide no information about the relationship between the allowed ROE and the cost of capital.”¹³⁴

The fallacy of using the MB ratio to set the ROE is illustrated in the testimony of EDF, in which EDF claims the appropriate ROE today is 5 percent, barely above the cost of BBB rated utility debt at 4.16 percent.¹³⁵

Witnesses Morin (SDG&E) and Villadsen (SCE) come to similar conclusions regarding the use of the MB ratio to set the ROE.¹³⁶ Mr. Knecht also discusses the MB ratio test, and states that it should be rejected.¹³⁷

The Commission should reject EDF’s assertion that the MB ratio be used to set the ROE, and should dismiss other intervenors’ arguments about the MB ratio.

¹³¹ Ex. PG&E-03, p. 1-51, lines 21-27.

¹³² Ex. PG&E-03, p. 1-51, line 27 to p. 1-52, line 1.

¹³³ Ex. PG&E-03, p. 1-52, lines 25-26.

¹³⁴ Ex. PG&E-03, p. 1-53, lines 13-18.

¹³⁵ Ex. PG&E-03, p. 1-54, lines 18-26.

¹³⁶ Ex. SDG&E-09, p. RAM-32 to p. RAM-34; SCE-05, pp. 46-50.

¹³⁷ Ex. Del Monte-01, p. 24, lines 3-28.

D. Financial risk, or leverage, adjustment, (ATWACC) is necessary to develop apples-to-apples ROEs for comparable group companies in determining PG&E's 2020 test year ROE

Financial risk is tied to the utility's capital structure. The proportion of its debt to permanent capital determines the level of financial risk, or leverage, that a utility faces. "As a utility's debt ratio increases, a higher return on equity may be needed to compensate for that increased risk."¹³⁸ The overall cost of capital for any firm is a function of its business and financial risk.¹³⁹

The CAPM and DCF estimation models' ROE estimates reflect the financial leverage at the market value capital structure of each company. Sample companies are selected to have comparable business risk, but the financial risk inherent in the ROE estimates can vary widely. The more equity in the sample companies' capital structures, the less financial risk, i.e., financial leverage, they have. The estimated ROE will be lower than if the company had less equity in its capital structure.

As a result, if financial risk is not considered when evaluating the results of the ROE estimation models, the models' results may be misinterpreted and the Commission may adopt an ROE that does reflect the leverage of the capital structure that the Commission is authorizing to go along with the authorized ROE.¹⁴⁰ For example, if all the companies in the sample have 20 percent debt, are of the same business risk, and have an estimated ROE of 10 percent, then the estimated ROE will be lower relative to a sample of companies that also have the same business risk but have more leverage. If the Commission were to adopt the 10 percent ROE, but also adopt a capital structure with more leverage, say 40 percent debt, then the Commission would be mixing apples and oranges, since at 40 percent debt, then the sample companies' estimated ROEs from the models would have been higher due to the higher leverage.

Thus, the CAPM and DCF models' ROE estimates need to reflect PG&E's capital

¹³⁸ D.12-12-034, *mimeo*, p. 29.

¹³⁹ Ex. PG&E-01, p. 2-27, lines 21-27. A firm with no debt would have no financial risk, and then have only business risk.

¹⁴⁰ Ex. PG&E-01, p. 2-28, lines 9-16.

structure that will be used for ratemaking, unless all the firms in the sample group have the same capital structure that the Commission authorizes for PG&E. However, their capital structure is different. Hence, Dr. Vilbert adjusts the model results using the “ATWACC” method to ensure the ROE for each company in the sample group is measured at PG&E’s proposed equity ratio.¹⁴¹ The ATWACC method relies on the well-established principle that firms with the same business risk but different financial risk will have the same, overall cost of capital, which is the ATWACC. Using the ATWACC method to account for firms with different leverage, once the ROE is estimated using CAPM or DCF, then the cost of debt for each company is also estimated and the overall cost of capital, the ATWACC, is computed for each firm. The average of the ATWACC for all the firms is then used to estimate the ROE at whatever degree of leverage is assumed for ratemaking.¹⁴²

The ATWACC method of adjusting for leverage is also used by Villadsen for SCE, and by Knecht for Del Monte.¹⁴³ Cal Advocates witness Rothschild acknowledges the relationship between leverage and ROE, but fails to adjust his ROE model results to reflect PG&E’s leverage instead of that of his sample group.¹⁴⁴ FEA witness O’Donnell, and EPUC witness Gorman do not consider the degree of financial risk (leverage) in their estimation of the ROE, and because the companies in their sample groups are less leveraged than PG&E, their ROE estimates are biased downward. PG&E witness Vilbert estimates the range of this bias for the intervenor experts of as much as 0.9 percent.¹⁴⁵ The need to adjust CAPM and DCF modeling for financial risk due to different leverage among the sample group is another reason the Commission should adopt Dr. Vilbert’s method and estimates.

IV. CAPITAL STRUCTURE

PG&E proposes to leave its 52 percent equity percentage of its capital structure

¹⁴¹ Ex. PG&E-01, p. 2-28, lines 18-25.

¹⁴² Ex. PG&E-01, p. 2-29.

¹⁴³ Ex. SCE-02, p. 10 to p. 13; Ex. Del Monte-01, p. 49, line 21 to p. 50, line 25.

¹⁴⁴ Ex. Cal Advocates-01, p. 36, line 17 to p. 37, line 6.

¹⁴⁵ Ex. PG&E-03, p. 1-61, Table 11.

unchanged from the last full cost of capital proceeding in 2012.

Because PG&E is not issuing preferred stock, its preferred stock ratio is declining. This has resulted in a slight decrease to its preferred stock ratio from 1.0 percent to 0.5 percent, and a slight commensurate increase to its debt ratio from 47 percent to 47.5 percent. While credit ratings are driven by many factors, PG&E provides testimony on credit metrics, showing that a 52 percent common equity percentage is important for credit quality purposes.¹⁴⁶

None of the intervenors oppose PG&E's capital structure proposal. As a different approach based on ATWACC, Del Monte proposes an equity ratio of 48.66 percent, which Witness Knecht describes as the mean of electric utility "fractions" for his 46 *Value Line* firms.¹⁴⁷ Del Monte tied his equity ratio to his ROE recommendation of 7.11 percent, and recommended that if the Commission adopts a different capital structure for PG&E, then the 7.11 percent should be adjusted, up or down, to reflect the higher or lower leverage. Del Monte presents no basis for the recommendation of 48.66 percent equity, other than it is the average common equity ratio of Witness Knecht's proxy group. Del Monte provides no evidence that its recommended equity ratio could support investment grade credit ratings for PG&E, a critical factor for issuing debt at a reasonable cost.

In contrast, PG&E has provided substantial testimony demonstrating that a 52 percent common equity ratio is appropriate and needed to support credit metrics. The Commission should give no weight to Del Monte's recommendation, and should approve PG&E's requested 52 percent common equity percentage for the test period.

V. EMBEDDED COST OF DEBT AND PREFERRED EQUITY

A. PG&E's embedded cost of debt and cost of preferred equity are uncontested, and should be approved for the 2020 test year

PG&E's proposed 2020 cost of long-term debt is 5.16 percent and its 2020 cost of

¹⁴⁶ Ex. PG&E-01, p. 4-4, line 7 to p. 4-7, line 7. PG&E notes that actual credit ratings from Moody's, S&P, and Fitch can depend on other things than credit metrics, i.e., such as business risk.

¹⁴⁷ Ex. Del Monte-01, p. 45, lines 17-18.

preferred stock is 5.52 percent.¹⁴⁸ These proposals are uncontested and should be approved in this case.

As explained by PG&E, during PG&E's bankruptcy, it expects to continue full operations, including investing capital in its gas and electric infrastructure.¹⁴⁹ However, except for its debtor-in-possession (DIP) financing, PG&E is not able to issue new debt or equity while in bankruptcy and will rely on its cash from operations (internal financing) and proceeds of its DIP facilities in place of the long-term debt that it otherwise would have raised in conventional capital markets.¹⁵⁰ Thus, the cost of long-term debt requested by PG&E includes the costs of its pre-petition debt, consisting of senior unsecured fixed rate notes and Pollution Control bonds.¹⁵¹ In addition, the 2020 forecast cost of debt incorporates DIP financing costs, based on the projected changes in the amount of debt outstanding and changes in the interest costs of that debt.¹⁵² The 2020 average is 5.16 percent, as shown on Table 5.3.¹⁵³

PG&E estimated its 2020 embedded cost of preferred stock in the same way it estimated the embedded cost of debt. To do so, PG&E projected its embedded cost of preferred stock by incorporating changes for the remainder of 2019 and 2020. This resulted in projected 2020 average embedded cost of preferred stock of 5.52 percent, shown in Table 5-4.¹⁵⁴

As mentioned above, PG&E's forecast costs of long-term debt and preferred stock for test year 2020 are uncontested. They should be approved in this case.

B. Cost of debt upon resolution of PG&E's Chapter 11 cases

In Section VIII below, PG&E notes that its cost of long-term debt for COC purposes may be different with its exit financing for its emergence from Chapter 11. To account for this possible difference, PG&E proposes to update its cost of debt for COC purposes, for the period

¹⁴⁸ Ex. PG&E-01, p. 1-3, Table 1-1.

¹⁴⁹ Ex. PG&E-01, p. 5-1, lines 18-20.

¹⁵⁰ Ex. PG&E-01, p. 5-1, line 20 to p. 5-2, line 1.

¹⁵¹ Ex. PG&E-01, p. 5-5, lines 3-31.

¹⁵² Ex. PG&E-01, p. 5-8, line 27 to p. 5-9, line 31.

¹⁵³ Ex. PG&E-01, p. 5-11, Table 5-3, line 17.

¹⁵⁴ Ex. PG&E-01, p. 5-13, Table 5-4, line 7.

beginning after it emerges from bankruptcy to incorporate the costs of its exit financing, and the appropriate forward-looking forecast of debt costs for the remaining forecast period.

VI. COST OF CAPITAL ADJUSTMENT MECHANISM

A. PG&E's proposal to retain the cost of capital adjustment mechanism is sound

PG&E proposes to keep the existing cost of capital adjustment mechanism in place for 2020 through 2022. Assuming a three-year COC case cycle, the next COC application would be due in April 2022 for a 2023 test year. Until the 2023 test year case, PG&E proposes to maintain the existing mechanism with (i) its 100 basis point band, (ii) an interest rate index determined by each utility's specific credit ratings, (iii) an interest rate benchmark using a 12-month average of utility bond interest rates, and (iv) an adjustment percentage of 50 percent of the change in the benchmark once the dead band is reached that would balance the interests in stability and keeping the ROE from becoming stale, while simplifying workload burdens.¹⁵⁵

Although PG&E's post-bankruptcy credit rating is unknown, PG&E believes that overall changes in interest rates are generally captured by any of the capital adjustment mechanism indices currently in use by the California utilities. Hence, no change in PG&E's benchmark interest rate should be made except to reset it to October 2018 through September 2019 monthly average, consistent with the current mechanism.¹⁵⁶

Cal Advocates, EPUC and SCE also support retention of the cost of capital mechanism unchanged.^{157 158}

B. Changes to the Capital Adjustment Mechanism proposed by other parties should not be adopted

SoCalGas and SDG&E also find the mechanism to be beneficial and support its

¹⁵⁵ Ex. PG&E-01, p. 6-2, lines 3-17.

¹⁵⁶ If PG&E were required to file post-bankruptcy COC application, it may be appropriate to suspend the capital adjustment mechanism for the forecast period addressed in that case, and to reset the benchmark interest rate based on the information and timing in that case.

¹⁵⁷ Ex. Cal Advocates-09, p. 2, line 24 to p. 4, line 15.

¹⁵⁸ Ex. SCE-01, p. 14, lines 1-2.

retention.¹⁵⁹ However, these two applicants recommend narrowing the 100 basis points dead band to 50 basis points and adding a few clarifications to address the recent instability of utility credit ratings. The SoCalGas and SDG&E proposal to reduce the dead band would make the mechanism more likely to trigger, and PG&E does not believe that this is a necessary change. PG&E appreciates SoCalGas and SDG&E's sensitivity to situations where utilities have split ratings and their request for guidance for utilities with non-investment grade ratings. However, PG&E does not support those requests at this time.

The only opposition to continuing the cost of capital mechanism came in Witness Knecht's testimony for Del Monte.¹⁶⁰ Mr. Knecht stated that the mechanism should be ended based on his single statement that "[i]t has kept allowed ROEs and rates unduly high for nearly a decade. It shifts to customers risks that should be carried by stockholders."¹⁶¹ Mr. Knecht's testimony does not provide any analysis of how the mechanism has worked. Nor has Mr. Knecht recognized that the authorized ROEs have continued for a long period in the context of Commission approved deferrals for new COC applications in the period from 2013 to 2018 while financial conditions tended to be relatively stable. Mr. Knecht wrongly blames the cost of capital mechanism for the past stability in authorized ROEs. Mr. Knecht's testimony does not provide a reasoned basis to reject the adjustment mechanism for PG&E, or for any other utility.

VII. CUSTOMER DEPOSITS (PG&E ONLY)

A. PG&E's Position

PG&E's direct testimony provides a full financial and ratemaking analysis of customer deposits (CD),¹⁶² as directed by D.14-08-032.¹⁶³ No party disputed this testimony and the principles it presented that provide the Commission with a sound basis on which to decide the appropriate ratemaking treatment for CDs given a utility's particular circumstances.

¹⁵⁹ Ex. SCG-01, p. 13, line 8 to p. 14, line 17; Ex. SDG&E-01, p. BAF-20, line 4 to p. BAF-22, line 2.

¹⁶⁰ Ex. Del Monte-01, p. 59, line 30 to p. 60, line 3.

¹⁶¹ Ex. Del Monte-01, p. 60, lines 1-3.

¹⁶² Ex. PG&E-01, Chapter 7.

¹⁶³ D.14-08-032, *mimeo*, p. 629.

PG&E explained that CDs are a permanent source of funds that can be invested in utility operations if not otherwise held as cash.¹⁶⁴ PG&E explained that CDs have the same characteristics as PG&E's conventional money debt: there is a requirement to repay the principal unless the customer defaults on their payments to PG&E;¹⁶⁵ the deposit has a contractual (tariffed) interest rate set equal to the 3-month commercial paper rate;¹⁶⁶ and, as explained in rebuttal testimony, because a customer's deposit is not secured, the customer could become a creditor similar to other non-secured creditors as a result of PG&E's bankruptcy.¹⁶⁷

If invested as cash, no specific ratemaking is otherwise needed to account for customer deposits; PG&E invests the deposits in highly liquid and safe money market funds, and the interest earned on the invested deposit is paid to the customer.¹⁶⁸ PG&E also explained that if CDs were mingled with PG&E funds used for operations, then it would be appropriate to treat them as a permanent source of debt funding invested in permanent assets.¹⁶⁹ In that event, the appropriate ratemaking treatment is to assume that a portion of rate base equal to the average annual balance of customer deposits is funded with customer deposits, at an interest rate equal to the rate paid to the depositors. To effect this in rates, the total revenue requirement otherwise adopted by the Commission is reduced by cost of the conventional debt that is replaced with CDs, and then the revenue requirement would be increased for the cost of the interest paid on CDs.¹⁷⁰ Expressed algebraically, the revenue requirement is reduced by the following amount:

Revenue Requirement reduction in any year = (average CD balance projected for that year) x (authorized cost of debt – the average forecast interest rate on 30-day commercial paper)

PG&E used this framework to develop its CD proposals in its direct and rebuttal testimony. As explained in PG&E's direct testimony, due to the uncertainties of its bankruptcy,

¹⁶⁴ Ex. PG&E-01, p. 7-2, lines 7-25.

¹⁶⁵ Ex. PG&E-01, p. 7-1, lines 19-21.

¹⁶⁶ Ex. PG&E-01, p. 7-1, lines 21-22.

¹⁶⁷ Ex. PG&E-03, p. 3-7, lines 2-3.

¹⁶⁸ Ex. PG&E-01, p. 7-6, lines 10-22.

¹⁶⁹ Ex. PG&E-01, p. 7-5, lines 1-8.

¹⁷⁰ Ex. PG&E-03, p. 3-3, line 25 to p. 3-4, line 6.

PG&E is holding the CD balance as cash, and hence, as described above, no special ratemaking mechanism is needed.¹⁷¹ However, as explained in PG&E's rebuttal testimony, PG&E now believes a reasonable assumption for ratemaking for the 2020 test year is to assume PG&E exits bankruptcy in mid-2020 and commingles the CDs with PG&E's other cash used for operations.¹⁷²

This would mean that for the first half of the year 2020, CDs would have no impact on PG&E's revenue requirement because the CDs are kept as cash in money market funds and not being used to fund operations. For the second half of 2020 and for the following attrition years, applying the CD framework would result in the revenue reduction described above.¹⁷³

B. TURN's and Cal Advocates' Positions

TURN agrees that if PG&E is holding the cash as investments in money market funds then no further ratemaking is necessary.¹⁷⁴ TURN proposes that the CPUC revisit this issue in PG&E's next cost of capital following bankruptcy.¹⁷⁵ TURN also suggests that CDs should be treated as a simple reduction to rate base.¹⁷⁶

Cal Advocates does not make a proposal for CDs in this proceeding. Instead, Cal Advocates recommends that the Commission move the CD issue back to the GRC, from which it came.¹⁷⁷ In PG&E's currently pending 2020 GRC, Cal Advocates recommends the same ratemaking treatment PG&E has proposed in this cost of capital proceeding in the case where the cash from CDs is invested in utility operations.¹⁷⁸

C. Discussion

The Commission should reject Cal Advocates' and TURN's calls to review the CD issue

¹⁷¹ Ex. PG&E-01, p. 7-6, lines 10-20.

¹⁷² Ex. PG&E-03, p. 3-4, line 19 to p. 3-5, line 29.

¹⁷³ Ex. PG&E-03, p. 3-5, lines 13-14.

¹⁷⁴ Ex. TURN-02, p. 1, line 20 to p. 2, line 24.

¹⁷⁵ Ex. TURN-02, p. 3, lines 7-8.

¹⁷⁶ Ex. TURN-02, p. 3, line 15 to p. 5, line 14.

¹⁷⁷ Compare Ex. Cal Advocates-09, p. 4, line 23 to p. 5, line 17, with D.14-08-032, *mimeo*, p. 629.

¹⁷⁸ Ex. PG&E-03, p. 3-3, line 25 to p. 3-4, line 4, quoting Cal Advocates' testimony in PG&E's 2020 GRC.

in some later proceeding. Doing so is unnecessary, as PG&E has provided a complete evaluation in this proceeding that is sufficient for the Commission to decide on the appropriate ratemaking treatment for customer deposits.¹⁷⁹

With the framework presented by PG&E in this proceeding, the Commission can decide the ratemaking treatment appropriate to PG&E's particular circumstances and how it is handling its cash receipts from customer deposits. PG&E's proposal for the treatment of CDs post-bankruptcy is the same as the Commission approved in D.14-08-032, is the same as Cal Advocates has proposed in PG&E's current GRC and is the same as TURN has proposed as an interim solution.

The Commission should also reject TURN's suggestion that in the future CDs should be a reduction to rate base. To do so would assume that CDs, instead of being like debt, are like debt and equity. This is contrary to fact and Commission precedent. The Commission has previously found that CDs are not like equity and ruled against TURN on this very point.¹⁸⁰ The Commission stated:

We decline to apply customer deposits as a rate base offset as proposed by TURN. PG&E has a legal obligation to refund customer deposits recorded as an interest bearing liability on the balance sheet, the same as other debt obligations. Customer deposits are not equity. These facts do not support treating customer deposits as a form of equity to apply in reducing rate base, as TURN proposes.¹⁸¹

Accordingly, the Commission should adopt PG&E's proposed framework for evaluating CDs, and should adopt PG&E's proposed revenue requirement adjustments for CDs as PG&E has described them in Table 3-1 in its rebuttal testimony.¹⁸²

¹⁷⁹ PG&E, Cruz, Tr. 971:21-23.

¹⁸⁰ D.14-08-032, *mimeo*, p. 627.

¹⁸¹ D.14-08-032, *mimeo*, p. 627.

¹⁸² Ex. PG&E-03, p. 3-6, Table 3-1.

VIII. SHOULD PG&E BE ORDERED TO FILE A NEW COST OF CAPITAL APPLICATION WHEN IT EMERGES FROM CHAPTER 11 BANKRUPTCY?

A. If PG&E satisfies the requirements of AB 1054 and participates in the Wildfire Fund, a new application would not be required for the purpose of evaluating those conditions since they are assumed herein

PG&E's opening testimony in the 2020 COC case was served April 22, 2019, well before California enacted AB 1054. Prior to the enactment of AB 1054, PG&E policy witness Bijur stated that if policy changes were made and implemented that resulted in material reductions to the risks that PG&E's investors are required to bear for catastrophic wildfires, PG&E would update this application and lower the proposed cost of capital.¹⁸³ Mr. Bijur stated that such an update would consider the change in risk and the impact of that change on the cost of capital.¹⁸⁴

With the passage of AB 1054, PG&E reduced its requested 2020 ROE from 16 percent to 12 percent, assuming that PG&E will qualify for, and can participate in, the Wildfire Fund.¹⁸⁵ PG&E made this change because AB 1054 mitigates some risks that catastrophic wildfires pose to investors of utilities that participate in the Wildfire Fund, although some risk remains for investors due to the potential for fund depletion, the lack of a track record for implementation, and the continuation of inverse condemnation.

Therefore, the current COC case is expected to address and authorize the appropriate ROE starting in 2020 given the policy changes, assumptions and implementation uncertainties surrounding in AB 1054. Subject to the reservations contained in the subsections below, a new cost of capital application would not be needed when PG&E emerges from bankruptcy in order to address the effects of participation in the Wildfire Fund. Such conditions are assumed herein.

B. If PG&E is unable to satisfy the requirements of AB 1054 and does not participate in the Wildfire Fund, a new application will be necessary

For purposes of this COC case, PG&E's supplemental testimony assumed that its Chapter 11 Cases will be resolved by the June 30, 2020 deadline contained in AB 1054 as a prerequisite for its participation in the wild fire fund. PG&E expects that the final decision expected in this

¹⁸³ Ex. PG&E-01, p. 1-2, lines 6-10, and p. 1-5, lines 10-19.

¹⁸⁴ Ex. PG&E-01, p. 1-5, lines 15-16.

¹⁸⁵ Ex. PG&E-02, p. 1-5, line 21 to p. 1-6, line 10.

proceeding will make the same assumption.

PG&E is working diligently to meet the June 30, 2020 deadline. However, under current law, if PG&E is unable to participate in the Wildfire Fund, the assumed mitigations to its wildfire risk will not occur, and consequently a higher ROE and cost of capital would be required to compensate investors for the greater risk. Under those circumstances, a new cost of capital application would be needed.

C. The cost of debt authorized in the cost of capital decision should be revised to reflect the cost of debt upon emergence from bankruptcy

The cost of debt for PG&E's 2020 test year COC is primarily based on the costs of its pre-petition long-term debt and a portion of the DIP financing obtained to support PG&E's continuing utility operations and investments in its utility facilities during bankruptcy. PG&E anticipates that its cost of debt for COC purposes likely will be different when it emerges from bankruptcy. Therefore, PG&E proposes to update its cost of debt for COC purposes, to incorporate the costs of its exit financing, and the appropriate forward-looking forecast of debt costs for the remaining forecast period. The update for post-bankruptcy debt costs would not change the authorized COC cost of debt in effect for the period prior to PG&E's filing for approval of the new debt costs.

PG&E believes the update for post-bankruptcy debt costs should not require an application and could be accomplished more efficiently through an advice filing authorized in this case.

D. Nothing in this case would preclude the Commission from requiring PG&E to file a cost of capital application after it emerges from bankruptcy

Nothing in this proceeding is meant to affect the Commission's authority to direct PG&E to present cost of capital issues as a result of the Commission's review of PG&E's plan for emerging from bankruptcy. Consequently, a new cost of capital application could result from a future Commission order outside this docket.

IX. CONCLUSION

PG&E's testimony establishes the need for a significant increase in its authorized 2020 test year ROE and ROR. The higher risk of California utilities than that of typical electric utilities in the country requires an increase to approximately an 11 percent ROE, even before California utilities' unique wildfire and inverse condemnation risks are considered. AB 1054 has helped mitigate wildfire risk, although it did nothing about inverse condemnation risk. PG&E's expert witnesses analyzed the potential impact of AB 1054 and the residual risk it leaves with PG&E, to determine the incremental impact on PG&E's ROE that investors would require given that risk. On that basis, PG&E maintains that a ROE of approximately 12 percent is required to fairly compensate investors for the risk they bear. The Commission should approve PG&E's requested ROE, as well as PG&E's other proposals in this case.

In conclusion, PG&E requests that the Commission make the following findings:

- Authorize a 12 percent ROE for PG&E for its gas and electric utility business;
- Authorize PG&E's proposed 2020 cost of debt of 5.16 percent;
- Authorize PG&E's proposed 2020 test year cost of preferred stock of 5.52 percent;
- Authorize PG&E's proposed ratemaking equity percentage at 52 percent;
- Authorize an 8.72 percent ROR for PG&E for the 2020 test year;
- Authorize the Cost of Capital Adjustment Mechanism to remain in effect starting for 2021, with a new benchmark interest rate as required under the mechanism;

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- Approve PG&E's proposals for treatment of customer deposits while it is in bankruptcy and for the period after its Chapter 11 Cases are resolved; and,
- Authorize PG&E to file to revise its cost of debt for the period after resolution of its Chapter 11 Cases, and to address other elements of its cost of capital, as appropriate.

Respectfully Submitted,

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