

Company: San Diego Gas & Electric Company (U 902 M)  
Proceeding: 2020 Cost of Capital  
Application: A.19-04-017  
Exhibit No.: SDG&E-09

**SAN DIEGO GAS & ELECTRIC COMPANY (U 902 M)**  
**PREPARED REBUTTAL TESTIMONY OF ROGER A. MORIN, Ph.D.**  
**(RETURN ON EQUITY)**

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



**August 16, 2019**

## TABLE OF CONTENTS

I.	INTRODUCTION .....	1
II.	REBUTTAL TO MR. ROTHSCHILD’S TESTIMONY .....	3
A.	Allowed Returns .....	8
B.	Understated Dividend Yield .....	10
C.	DCF Dividend Yield and Flotation Costs.....	12
D.	DCF Growth Rates.....	13
1.	Retention Growth Method .....	14
2.	Analysts’ Growth Forecasts.....	17
E.	CAPM Risk-Free Rate .....	20
F.	Empirical CAPM .....	23
G.	Risk Adjustment.....	25
H.	Capital Structure Recommendation .....	25
I.	Responses to Mr. Rothschild’s Criticisms .....	26
1.	DCF Dividend Growth Rates.....	26
2.	Quarterly Versus Annual DCF Model .....	27
3.	Arithmetic vs Geometric Averages.....	28
4.	Flotation Cost Adjustment .....	30
5.	U.S. Treasury Bond Betas.....	31
J.	Conclusion .....	35
III.	REBUTTAL TO DR. GRIFFING’S TESTIMONY.....	37
A.	Allowed Returns .....	41
B.	Inconsistencies with Prior Testimonies .....	41
C.	CAPM Risk-Free Rate .....	42
D.	Risk Adjustment.....	45
E.	Capital Structure .....	46
F.	Conclusion .....	47
IV.	REBUTTAL TO MR. O’DONNELL’S TESTIMONY .....	48
A.	Spot Dividend Yield vs Expected Dividend Yield .....	51
B.	Dividend Yield and Flotation Costs.....	53
C.	Historical DCF Growth Rates.....	53
D.	Sustainable Growth Rates .....	55
E.	Appropriate DCF Growth Rates .....	56
F.	CAPM Risk-Free Rate .....	58

G.	CAPM Market Risk Premium (MRP) .....	59
H.	Empirical CAPM .....	64
I.	SDG&E Risk Premium .....	64
J.	Responses to Mr. O'Donnell's Criticisms. ....	66
	1. Dividend Yield Calculation .....	66
	2. Analyst Growth Forecasts.....	66
	3. Interest Rate Forecasts .....	69
	4. Market Risk Premium .....	69
	5. Historical Risk Premium.....	70
	6. Allowed Risk Premium.....	71
V.	REBUTTAL TO MR. GORMAN'S TESTIMONY.....	73
A.	DCF Dividend Yield and Flotation Costs.....	76
B.	Sustainable Growth.....	76
C.	CAPM Risk-Free Rate .....	77
D.	CAPM: Market Risk Premium .....	79
E.	CAPM Understatement.....	80
F.	Risk Premium Analysis.....	80
G.	Response to Mr. Gorman's Comments.....	83
	1. Peer Group .....	83
	2. Flotation Cost.....	83
	3. DCF Growth Rates.....	84
	4. Accuracy of Forecasts.....	86
	5. Multi-Stage DCF Analysis and Gross Domestic Product Growth.....	86
	6. Interest Rate Forecast.....	89
	7. Historical Risk Premium Analysis.....	90
	8. Empirical CAPM .....	90
	9. Risk Premium and Interest Rates.....	91



1 Utility Consumers' Action Network And Protect Our Communities Foundation;<sup>2</sup> 3) Mr.  
2 O'Donnell on behalf of the Federal Executive Agencies ("FEA"),<sup>3</sup> and 4) Mr. Gorman on  
3 behalf of The Utility Reform Network ("TURN").<sup>4</sup> My rebuttal addresses those portions  
4 of the aforementioned witnesses' testimonies that deal with SDG&E.

5 **Q. PLEASE DESCRIBE HOW YOUR REBUTTAL TESTIMONY IS ORGANIZED.**

6 A. My rebuttal testimony is organized into four sections, corresponding to each of the  
7 aforementioned witnesses' testimony.

8 **Q. PLEASE SUMMARIZE THE RATE OF RETURN RECOMMENDATIONS OF**  
9 **THE FOUR WITNESSES YOU ARE REBUTTING IN THIS CASE.**

10 A. The ROE recommended by each party I am rebutting in this case is as follows:

Mr. Rothschild	8.49%
Dr. Griffing	9.15%
Mr. O'Donnell	9.50%
Mr. Gorman	9.65%

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<sup>2</sup> *Prepared Direct Testimony of Marlon F. Griffing, Ph.D., Cost of Capital on behalf of Utility Consumers' Action Network and Protect Our Communities Foundation* (August 1, 2019) ("UCAN and POC Testimony (Griffing)").

<sup>3</sup> *Direct Testimony and Exhibits of Kevin W. O'Donnell, CFA, on behalf of The Federal Executive Agencies* (August 1, 2019) ("FEA Testimony (O'Donnell)").

<sup>4</sup> *Direct Testimony and Exhibits of Michael P. Gorman on behalf of Energy Producers & Users Coalition ("EPUC"), Indicated Shippers, and The Utility Reform Network ("TURN")* (August 1, 2019) ("TURN Testimony (Gorman)"). Mr. Gorman only testifies on behalf of TURN regarding SDG&E's application.

1 **II. REBUTTAL TO MR. ROTHSCHILD’S TESTIMONY**

2 **Q. PLEASE SUMMARIZE MR. ROTHSCHILD’S RATE OF RETURN**

3 **RECOMMENDATION.**

4 A. Mr. Rothschild recommends a ROE of 8.49% for SDG&E, the lowest ROE of the four  
5 rate of return witnesses.

6 In determining the cost of equity, Mr. Rothschild applies a constant growth  
7 Discounted Cash Flow (“DCF”) analysis, a non-constant growth DCF analysis, and a  
8 Capital Asset Pricing Model (“CAPM”) to a group of 29 electric utilities. Mr.  
9 Rothschild’s ROE results from the three methodologies are summarized as follows:<sup>5</sup>

Constant Growth DCF	7.51% - 8.72%
Non-Constant Growth DCF	8.45% - 9.41%
CAPM	6.77% - 9.33%

10  
11 Based on these results, Mr. Rothschild somehow concludes that SDG&E’s cost of  
12 equity is 8.49%. Mr. Rothschild does not fully explain how he arrived at his 8.49%  
13 recommendation from these six estimates. I was unable to reconstruct the 8.49% with  
14 varying combinations of averages, medians, or midpoints of the six estimates. What is  
15 more confusing is Mr. Rothschild’s statement that the cost of equity of his proxy group is  
16 8.75%.<sup>6</sup> For purposes of this rebuttal testimony, I shall assume his recommendation is  
17 8.49%.

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<sup>5</sup> Cal PA Testimony (Rothschild) at 6 (Table 5).

<sup>6</sup> *Id.* at 30:13.

1 **Q. WHAT IS YOUR FIRST GENERAL REACTION TO MR. ROTHSCHILD'S**  
2 **COST OF COMMON EQUITY RECOMMENDATION?**

3 A. My first general reaction to his recommendation, before I engage in a more technical  
4 critique, is that there are two major flaws in Mr. Rothschild's testimony. First, Mr.  
5 Rothschild's recommended 8.49% ROE for SDG&E lies outside the zone of currently  
6 authorized ROEs of 9.6% – 9.8% for vertically integrated electric utilities in the United  
7 States in 2018 and 2019.<sup>7</sup> This is even more galling when considering the fact that  
8 SDG&E is among the riskiest, if not the riskiest, electric utility in the industry at this time  
9 as I demonstrated in my direct testimony, and as reflected in the multiple credit rating  
10 agency downgrades that SDG&E has experienced in the last year. I am not aware of any  
11 vertically integrated electric utility having an allowed return near Mr. Rothschild's  
12 recommended 8.49%. Mr. Rothschild's recommended reduction of the Company's ROE  
13 down to 8.49%, if ever adopted, would result in one of the lowest ROE's authorized in  
14 the vertically integrated electric utility industry – for one of the riskiest in that industry.

15 Mr. Rothschild's draconian recommendation would cause even more adverse  
16 consequences on the Company's creditworthiness than have already occurred, on its  
17 financial integrity, on the Company's capital raising ability, and ultimately on its  
18 customers.<sup>8</sup> Moreover, Mr. Rothschild's recommended ROE lies below the zone of his

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<sup>7</sup> See S&P Global Intelligence, RRA Regulatory Focus, *Major Rate Case Decisions January – June 2019* (Jul. 22, 2019); S&P Global Intelligence, RRA Regulatory Focus, *Major Rate Case Decisions January – December 2018* (Jan. 31, 2019).

<sup>8</sup> See, e.g., *Moody's, Rating Action: Moody's affirms San Diego Gas & Electric's ratings; changes outlook to positive from negative*, dated July 29, 2019 at 1 ("Moody's July 29 Report") (noting that its current credit rating for SDG&E depends upon a "credit supportive" outcome in this cost of capital proceeding, with an outcome that is not credit supportive putting downward pressure on the Company's credit rating).

1 own comparable companies' authorized and expected ROEs. These facts provide clear  
2 proof that his ROE recommendation for SDG&E is far too low.

3 **Q. DO YOU HAVE OTHER GENERAL REACTIONS TO THE COMMON EQUITY**  
4 **RECOMMENDATION OF MR. ROTHSCHILD?**

5 A. Yes. Another general reaction to Mr. Rothschild's testimony is that there are serious  
6 flaws in his implementation of both the DCF and CAPM methodologies.

7 **Q. IS MR. ROTHSCHILD'S LOW RECOMMENDED ROE APPROPRIATE AT**  
8 **THIS TIME?**

9 A. No. Mr. Rothschild's recommended ROE of 8.49% is untimely and contrary to  
10 customers' best interests to receive reliable and reasonably-priced service. As I discussed  
11 in my direct testimony, if SDG&E's authorized ROE is set too low, it will ultimately  
12 increase costs for SDG&E customers.<sup>9</sup> The CPUC approval of my base recommended  
13 ROE of 10.9%, along with the adoption of the Company's proposed capital structure and  
14 supportive regulation, will buttress these goals and provide measurable benefits to  
15 SDG&E customers.<sup>10</sup>

16 Restoring the Company's financial viability and creditworthiness decreases  
17 borrowing costs, improves access to capital and the availability of longer-term debt  
18 maturities, and enables the Company to absorb any negative volatility in its financial  
19 performance. Moreover, maintaining the Company's financial viability will have  
20 beneficial long-term cost implications for the Company and its customers as the

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<sup>9</sup> See Prepared Direct Testimony of Dr. Roger Morin (April 2019) ("Ex. SDG&E-04 (Morin)"), at 5-7.

<sup>10</sup> See *id.* at 60-62 (discussing why the Company's proposed capital structure is necessary to begin to restore SDG&E's 'A' credit rating, which results in the lowest cost of capital for ratepayers); see also Moody's July 29 Report (noting the need for credit supportive regulatory outcomes to build upon SDG&E's positive rankings momentum).



1 Company re-finances existing debt, issues new capital, and enters into new contractual  
2 arrangements. Clearly, SDG&E's customers have a vested interest in a strong financial  
3 position for the utility. The interests of customers and shareholders are consistent, not  
4 mutually exclusive. They both benefit from a financially sound utility.

5 **Q. WHAT ARE THE BASIC CONCLUSIONS OF YOUR REBUTTAL TO MR.**  
6 **ROTHSCHILD'S COST OF EQUITY TESTIMONY?**

7 A. Mr. Rothschild seriously understates SDG&E's cost of common equity. A proper  
8 application of cost of capital methodologies would produce results substantially higher  
9 than those that he obtained, notwithstanding the fact that his recommended ROE does not  
10 even consider that SDG&E remains among the riskiest, if not the riskiest, electric utility  
11 in the industry at this time.

12 **Q. ARE THERE ANY AREAS OF MR. ROTHSCCHILD'S TESTIMONY WITH**  
13 **WHICH YOU AGREE?**

14 A. There are very few. I agree with Mr. Rothschild's beta ("β") estimates and market risk  
15 premium ("MRP") estimates in the CAPM analysis. I otherwise believe that his  
16 implementation of the DCF and CAPM methodologies is flawed.

17 **Q. PLEASE SUMMARIZE YOUR SPECIFIC CRITICISMS OF MR.**  
18 **ROTHSCHILD'S TESTIMONY.**

19 A. I have a number of specific criticisms of Mr. Rothschild's testimony, as follows:

20 **1. ROE Recommendation Outside of the Mainstream.** Mr. Rothschild's  
21 recommended ROE is outside the zone of currently authorized ROEs for utilities in the  
22 United States and for his own sample of companies. As noted, the average authorized  
23 ROEs in the vertically integrated electric utility industry in 2018 and 2019 as reported in

1 the Regulatory Research Associates quarterly review are in the 9.6% - 9.8% range.<sup>11</sup> The  
2 currently-authorized ROEs for Mr. Rothschild's peer companies average approximately  
3 10.0% and the average expected ROE for the group is 10.5% according to Value Line  
4 and as shown in Mr. Rothschild's testimony.<sup>12</sup> These authorized and expected returns  
5 exceed by a significant margin Mr. Rothschild's recommended 8.49% return for SDG&E,  
6 let alone the much higher relative risk of SDG&E.

7 **2. Understated Dividend Yield.** Mr. Rothschild's dividend yield component is  
8 understated because it is not consistent with the annual form of the DCF model. It is  
9 inappropriate to increase the dividend yield by adding one-half the future growth rate to  
10 the spot dividend yield. The appropriate manner of computing the expected dividend  
11 yield when using the plain vanilla annual DCF model is to add the full growth rate rather  
12 than one-half the growth rate. This adjustment also allows for the failure of the annual  
13 DCF model to allow for the quarterly timing of dividend payments. In short, Mr.  
14 Rothschild's DCF results are understated by this omission.

15 **3. DCF Dividend Yield and Flotation Costs.** Mr. Rothschild's dividend yield  
16 component is understated because it does not allow for flotation costs and, as a result, a  
17 legitimate expense is left unrecovered and his DCF results, as well as the results from the  
18 other three methodologies, are understated by 20 basis points.<sup>13</sup>

19 **4. DCF Growth Rates.** In order to estimate the growth component of the DCF  
20 model, Mr. Rothschild has put all of his eggs in one basket, namely by using the so-called

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<sup>11</sup> See *infra*, note 7.

<sup>12</sup> Cal PA Testimony (Rothschild) at 18:12.

<sup>13</sup> See Ex. SDG&E-04 (Morin) at 48-53 (discussing the need for flotation costs).

1 retention ratio method. This method is logically circular because it requires its user to  
2 assume the answer to begin with. Analysts growth forecasts are ignored and so are  
3 historical growth rates. Most analysts, including all the other ROE witnesses in this  
4 proceeding, rely on analysts' growth forecasts to implement the DCF model for the  
5 simple reason that the stock price Mr. Rothschild uses in his DCF analysis is predicated  
6 on analysts' growth forecasts and not retention ratio growth.

7 **5. CAPM Risk-Free Rate.** Mr. Rothschild's estimate of the CAPM risk-free rate  
8 ("RF") is too low because it is based on current interest rates rather than on projected  
9 rates, and is based on short-term interest rates rather than on long-term interest rates.

10 **6. CAPM and the Empirical CAPM ("ECAPM").** The basic version of the  
11 CAPM used by Mr. Rothschild understates the Company's cost of equity for low-beta  
12 securities by 50 basis points as required by the Empirical CAPM.

13 **7. SDG&E Risk Premium.** Mr. Rothschild fails to allow for the fact that SDG&E  
14 is among the riskiest, if not the riskiest, electric utilities at this time.

15 **8. Capital Structure.** Mr. Rothschild's recommended common equity ratio of 52%  
16 is based on the wrong data.

17 I shall now discuss each criticism in turn.

18 **A. Allowed Returns**

19 **Q. ARE ALLOWED ROES OF ELECTRIC UTILITIES IMPORTANT**  
20 **DETERMINANTS OF INVESTOR GROWTH PERCEPTIONS AND INVESTOR**  
21 **EXPECTED RETURNS?**

22 **A.** Yes, they are. Allowed returns, while certainly not a precise indication of a company's  
23 cost of equity capital, are nevertheless important determinants of investor growth

1 perceptions and investor expected returns. They also serve to provide some perspective  
2 on the validity and reasonableness of Mr. Rothschild's recommendation.

3 **Q. HOW DOES MR. ROTHSCHILD'S RECOMMENDED ROE COMPARE WITH**  
4 **CURRENTLY ALLOWED ROES IN THE INDUSTRY?**

5 A. Mr. Rothschild's recommended ROE of 8.49% for SDG&E is outside the mainstream for  
6 electric utilities. As noted, the average authorized ROE was 9.8% in 2018 for vertically  
7 integrated electric utilities and 9.6% in 2019. Moreover, the average long-term expected  
8 return on equity for the electric utilities in Mr. Rothschild's own peer group is 10.5%.<sup>14</sup>  
9 Finally, the currently authorized ROE for the electric utilities in Mr. Rothschild's peer  
10 group is approximately 10.0%.

11 These allowed and expected ROEs exceed Mr. Rothschild's recommended ROE  
12 for SDG&E of only 8.49%. This excludes the fact that Mr. Rothchild's peer group does  
13 not reflect the risk of a combined utility operating in California – to which there is a  
14 relative risk premium – and that SDG&E's relative risk is among the highest, if not the  
15 highest, in the electric utility industry.

16 In short, Mr. Rothschild's recommendation is well outside the mainstream of the  
17 allowed rates of return that were current during the period in which Mr. Rothschild  
18 performed his analysis. It lies outside the zone of recently authorized returns for  
19 vertically integrated electric utilities and for Mr. Rothschild's own sample of companies.

20 Unreasonable rate treatment for a utility, if implemented, may have serious public  
21 policy implications and repercussions that are not mentioned in Mr. Rothschild's  
22 testimony. For example, the quality of regulation and the reasonableness of authorized

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<sup>14</sup> Cal PA Testimony (Rothschild) at 18:12.

1 ROEs clearly have implications for regulatory climate, economic development, and job  
2 creation in a given territory. The consistency of regulation in a given jurisdiction has  
3 similar implications.<sup>15</sup> I believe that Mr. Rothschild’s recommended return has negative  
4 implications on these grounds and is not consistent with the economic well-being of the  
5 State of California. It certainly provides a disincentive to invest in California, especially  
6 given the extraordinary risk circumstances of the electric utility industry in the State.<sup>16</sup>

7 **B. Understated Dividend Yield**

8 **Q. DO YOU HAVE ANY COMMENT ON MR. ROTHSCHILD’S DIVIDEND YIELD**  
9 **CALCULATION IN THE DCF ANALYSIS?**

10 A. Yes. I disagree with Mr. Rothschild’s dividend yield calculation. Mr. Rothschild  
11 multiplies the spot dividend yield by one plus one half the expected growth rate ( $1 +$   
12  $0.5g$ ) rather than the standard one plus the expected growth rate ( $1 + g$ ). Mr. Rothschild’s  
13 deviation from the standard methodology understates the return expected by the investor.

14 The fundamental assumption of the annual DCF model used by Mr. Rothschild is  
15 that dividends are received annually at the end of each year and that the first dividend is  
16 to be received one year from now. Thus, the appropriate dividend to use in a DCF model  
17 is the full prospective dividend to be received at the end of the year. Instead, Mr.  
18 Rothschild calculates the first dividend by multiplying the current dividend by one plus  
19 one-half the growth rate ( $1 + 0.5g$ ) instead of multiplying by one plus the growth rate ( $1$

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<sup>15</sup> See, e.g., Moody’s, *San Diego Gas & Electric Company: Update following outlook change to positive*, dated Aug. 2, 2019 at 9 (“Moody’s Aug. 2 Report”) (rating the “Consistency and Predictability of Regulation” for SDG&E as only a “Baa,” noting that the Company faces “high political risk and public scrutiny in California.”).

<sup>16</sup> See *id.* at 6 (“SDG&E’s credit also incorporates our view that utilities in California tend to receive a higher level of scrutiny and attention from both the media and the public, such that issues can quickly become contentious.”).

1 + g). Since the appropriate dividend to use in a DCF model is the prospective dividend  
2 one year from now rather than the dividend one-half year from now, Mr. Rothschild's  
3 approach understates the proper dividend yield.

4 Mr. Rothschild's use of the wrong methodology creates a downward bias in its  
5 dividend yield component, causing it to underestimate the cost of equity by  
6 approximately 10 basis points. For example, for a spot dividend yield of 3% and a  
7 growth rate of 6%, Mr. Rothschild's estimated dividend yield is  $3\%(1 + .06/2) = 3.1\%$ .  
8 The correct dividend yield to employ is  $3\%(1 + .06) = 3.2\%$ , which is 10 basis points  
9 higher. Thus, failure by Mr. Rothschild in his formula to recognize the quarterly nature  
10 of dividend payments understates the cost of equity capital by 12 basis points.

11 Moreover, the basic annual DCF model ignores the time value of quarterly  
12 dividend payments and assumes dividends are paid once a year at the end of the year.  
13 Multiplying the spot dividend yield by  $(1 + g)$  is actually a conservative attempt to  
14 capture the reality of quarterly dividend payments and understates the expected return on  
15 equity. Contrary to Mr. Rothschild's assertion that the annual DCF model overstates the  
16 cost of equity,<sup>17</sup> the opposite is in fact true. The annual DCF model actually understates  
17 the cost of equity by ignoring the more frequent compounding of quarterly dividends. On  
18 page 20 line 15, Mr. Rothschild justifies the use of the annual model on the weak grounds  
19 that it is easier.

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<sup>17</sup> Cal PA Testimony (Rothschild) at 20:15-17.

1           **C.     DCF Dividend Yield and Flotation Costs**

2           **Q.     IN YOUR DIRECT TESTIMONY, YOU STATED THAT THE RETURN ON**  
3           **EQUITY SHOULD BE ADJUSTED TO INCLUDE AN ALLOWANCE FOR**  
4           **FLOTATION COSTS. PLEASE COMMENT ON FLOTATION COSTS.**

5           A.     Flotation costs are very similar to the closing costs on a home mortgage. In the case of  
6           issues of new equity, flotation costs represent the discounts that must be provided to  
7           place the new securities. Flotation costs have a direct and an indirect component. The  
8           direct component represents monetary compensation to the security underwriter for  
9           marketing/consulting services, for the risks involved in distributing the issue, and for any  
10          operating expenses associated with the issue (printing, legal, prospectus, etc.). The  
11          indirect component represents the downward pressure on the stock price as a result of the  
12          increased supply of stock from the new issue. The latter component is frequently referred  
13          to as “market pressure.”

14                 Flotation costs for common stock are analogous to the flotation costs associated  
15          with past bond issues which, as a matter of routine regulatory policy, continue to be  
16          amortized over the life of the bond, even though no new bond issues are contemplated.  
17          In the case of common stock, which has no finite life, flotation costs are not amortized.  
18          Therefore, the recovery of flotation cost requires an upward adjustment to the allowed  
19          return on equity.

20                 As demonstrated in my direct testimony, the expected dividend yield component  
21          of the DCF model must be adjusted for flotation costs by dividing it by  $(1 - f)$ , where  $f$  is  
22          the flotation cost factor.

1 **Q. WHAT FLOTATION COST TREATMENT DID MR. ROTHSCHILD**  
2 **RECOMMEND IN THIS CASE?**

3 A. Mr. Rothschild's common equity return recommendation does not include any allowance  
4 for issuance expense. His DCF estimates of equity costs are therefore understated by 20  
5 basis points, as shown in Appendix A of my direct testimony.

6 Mr. Rothschild's reluctance to accept flotation costs is misplaced, given that  
7 common equity capital is not free. The flotation cost allowance to the cost of common  
8 equity capital is routinely discussed and applied in most corporate finance textbooks.

9 Mr. Rothschild's disregard of flotation costs is also inconsistent with Value Line  
10 data on historical and projected common stock issues. Electric utilities have issued, and  
11 will continue to issue new common stock in the future. In fact, Mr. Rothschild's  
12 retention growth formula to implement the DCF model contains an explicit allowance for  
13 future common stock issues via the "sv" term in the equation. Those common stock  
14 issues will certainly incur flotation costs.

15 **D. DCF Growth Rates**

16 **Q. WHAT GROWTH RATE PROXIES DID MR. ROTHSCHILD EMPLOY IN HIS**  
17 **DCF ANALYSIS?**

18 A. The Achilles' heel of Mr. Rothschild's testimony is his exclusive reliance on the so-  
19 called Retention Growth method in order to calculate the growth component of his DCF  
20 analysis. There are alternate superior methods used as proxies for growth by expert  
21 witnesses, including the other ROE witnesses in this proceeding, namely historical  
22 growth rates and analyst growth projections. Mr. Rothschild chose not to rely on far  
23 more conventional approaches in his DCF analyses.



1                   **1.       Retention Growth Method**

2   **Q.   DO YOU AGREE WITH THE RETENTION GROWTH RATE TECHNIQUE**  
3   **USED BY MR. ROTHSCHILD TO IMPLEMENT THE DCF MODEL?**

4   A.   No, I do not agree with this technique, a pivotal component of Mr. Rothschild's  
5       recommendation. In order to estimate the growth component of the DCF model, Mr.  
6       Rothschild relies exclusively on the retention growth method. According to this method,  
7       the growth rate is based on the equation  $g = br$  where  $b$  is the percentage of earnings  
8       retained and  $r$  is the expected rate of return on book equity (ROE). Mr. Rothschild also  
9       allows for growth through external stock issues by adding 'sv' to the retention growth  
10      equation:  $g = br + sv$ .

11           Mr. Rothschild's ROE recommendation rests heavily on the implementation of  
12      two DCF models, which unfortunately rely on a flawed approach. I disagree with Mr.  
13      Rothschild's retention growth proxy in the DCF analysis for three reasons: 1) the method  
14      is logically circular, for it requires the user to assume the ROE answer to begin with; 2) it  
15      is inconsistent with the academic empirical evidence; and 3) there is a potential lack of  
16      representativeness of Value Line's estimates as proxies for the market consensus.

17   **Q.   IS THE RETENTION GROWTH METHODOLOGY USED BY MR.**  
18   **ROTHSCHILD LOGICALLY CONSISTENT?**

19   A.   No, it is not. Mr. Rothschild's retention growth methodology contains a logical  
20      contradiction. The contradiction arises because the method requires an explicit  
21      assumption on the ROE expected from the retained earnings that produce future growth.  
22      Mr. Rothschild bases his ROE estimate on Value Line's average expected ROE estimate

1 for his peer group of electric utilities.<sup>18</sup> But the ROEs used by Mr. Rothschild in  
2 calculating the retention growth rate do not match Mr. Rothschild's current cost of equity  
3 estimate for SDG&E.

4 The purpose of this proceeding is to establish a fair and reasonable ROE on a  
5 prospective basis. It is inappropriate to develop a ROE recommendation based on  
6 assumed ROEs. The method is logically circular in a regulatory proceeding.

7 Mr. Rothschild actually relied on the average expected ROE of 10.5%.<sup>19</sup>  
8 Incidentally, that contradicts his statement that he used 12.5% for the expected ROE.<sup>20</sup>  
9 Leaving that aside, the problem is that the 10.5% ROE used in Mr. Rothschild's retention  
10 growth computation exceeds Mr. Rothschild's recommended cost of equity of 8.49% for  
11 SDG&E. Mr. Rothschild's analysis thus assumes that the earned returns (ROE) of the  
12 sample companies exceed what he has determined to be their cost of equity forever. That  
13 is, Mr. Rothschild assumes that these companies will earn a ROE higher than that granted  
14 by their regulators and reflected in their rates. That cannot be!

15 While this scenario implicit in Mr. Rothschild's retention growth method may be  
16 imaginable for an unregulated company, it is implausible to assume for a regulated  
17 company whose rates are continually re-set by its regulator at a level designed to permit  
18 the company to earn a return equal to its cost of capital. This logical flaw compromises  
19 the integrity of Mr. Rothschild's recommendation, and should be a sufficient basis for  
20 rejecting the results produced by this method. In essence, by using a ROE that differs

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<sup>18</sup> Cal PA Testimony (Rothschild) at 18 and Schedule ALR-4, p. 1.

<sup>19</sup> *Id.* at 18:12.

<sup>20</sup> *Id.* at 18, n. 9.

1 from his final recommended cost of equity, Mr. Rothschild requires the Commission to  
2 make inconsistent findings regarding ROE. I am perplexed as to why Mr. Rothschild  
3 assumes that his group of comparable utilities is expected to earn 10.5% forever, while at  
4 the same time he estimates an ROE of 8.49% for the Company. The only way that these  
5 utilities can earn a ROE of 10.5% is if rates are set so that they will in fact earn 10.5%.

6 Mr. Rothschild argues that “k,” is not the same variable as the future expected  
7 earned return on equity, “r.”<sup>21</sup> I disagree because regulators set the allowed return “r”  
8 equal the cost of equity “k”. The only way that these utilities can earn a ROE of “k” is if  
9 rates are set so that they will in fact earn “k”.

10 **Q. IS THE RETENTION GROWTH RATE TECHNIQUE CONSISTENT WITH**  
11 **THE EMPIRICAL EVIDENCE?**

12 A. No, it is not. The second difficulty with the retention growth rate approach is that the  
13 empirical finance literature demonstrates that particular method of determining growth is  
14 a very poor explanatory variable of market value, and is not as significantly correlated to  
15 measures of value, such as stock price and price/earnings ratios. This evidence is  
16 addressed later in my rebuttal.

17 **Q. ARE VALUE LINE’S ROE AND RETENTION RATIO ESTIMATES**  
18 **REPRESENTATIVE OF THE MARKET CONSENSUS?**

19 A. No. The third difficulty with Mr. Rothschild’s retention growth rates is that exclusive  
20 reliance on Value Line estimates of ROE and retention ratio runs the risk that such  
21 estimates are not representative of investors’ consensus forecast.

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<sup>21</sup> *Id.* at 14:18-20.

1                   **2. Analysts' Growth Forecasts**

2   **Q. DID MR. ROTHSCHILD RELY ON ANALYSTS' GROWTH FORECASTS IN**  
3   **HIS DCF ANALYSIS?**

4   A. No, he did not, despite the need to rely on and determine investor expectations. He  
5   himself states that stock prices are based on investor expectations.<sup>22</sup>

6   **Q. IS THERE ANY EMPIRICAL EVIDENCE DOCUMENTING THE**  
7   **IMPORTANCE OF EARNINGS IN EVALUATING INVESTORS'**  
8   **EXPECTATIONS IN THE INVESTMENT COMMUNITY?**

9   A. Mr. Rothschild denounces the use of financial analysts' earnings forecasts on the grounds  
10 that they are notoriously overstated.<sup>23</sup> Mr. Rothschild does not provide any published  
11 supportive evidence in refereed academic journals for that statement. The issue is not  
12 whether forecasts turn out to be correct or overstated; it is whether these forecasts are  
13 reflected in investor expectations and stock prices. There is an abundance of evidence  
14 attesting to the importance of earnings in assessing investors' expectations. First, the  
15 sheer volume of earnings forecasts available from the investment community relative to  
16 the scarcity of dividend forecasts attests to their importance. To illustrate, Value Line,  
17 Zacks Investment Research, First Call, Thompson Reuters, Yahoo Finance, and Multex  
18 provide comprehensive compilations of investors' earnings forecasts, to name some. The  
19 fact that these investment information providers focus on growth in earnings rather than  
20 growth in dividends indicates that the investment community regards earnings growth as  
21 a superior indicator of future long-term growth. Second, Value Line's principal

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<sup>22</sup> *Id.* at 26:1-2.

<sup>23</sup> *Id.* at 18:20-19:1.

1 investment rating assigned to individual stocks, Timeliness Rank, is based primarily on  
2 earnings, accounting for 65% of the ranking.

3 **Q. PLEASE DISCUSS THE USE OF ANALYSTS' FORECASTS IN APPLYING THE**  
4 **DCF MODEL TO UTILITIES.**

5 A. The best proxy for the growth component of the DCF model is analysts' long-term  
6 earnings growth forecasts. These forecasts are made by large reputable organizations.  
7 The data is readily available to investors and are representative of the consensus view of  
8 investors.

9 **Q. WHAT DOES THE PUBLISHED ACADEMIC LITERATURE SAY ON THE**  
10 **SUBJECT OF GROWTH RATES IN THE DCF MODEL?**

11 A. Published studies in the academic literature demonstrate that growth forecasts made by  
12 security analysts are reasonable indicators of investor expectations, and that investors rely  
13 on analysts' forecasts. This evidence is described in Chapter 10 of my most recent text,  
14 *The New Regulatory Finance*.<sup>24</sup> In short, published studies in the academic literature  
15 demonstrate that: (i) analysts' growth rate forecasts are reasonable indicators of investor  
16 expectations; and (ii) investors rely on such forecasts.

17 Mr. Rothschild's refusal to rely on analysts' growth forecasts because he sees  
18 them as unreasonable proxies for the DCF growth rate is without foundation and quite  
19 inconsistent with the empirical finance literature on the subject. In another astonishing  
20 statement, Mr. Rothschild states that earnings growth rates have no relation to either the

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<sup>24</sup> Morin, R. A., *The New Regulatory Finance*, Chapter 4 (2006)

1 cost of equity or stock price.<sup>25</sup> Quite the contrary, one of the driving forces behind stock  
2 prices is growth in earnings, as the empirical literature clearly demonstrates.

3 I also disagree with Mr. Rothschild that financial analysts' earnings forecasts are  
4 overly-optimistic, at least for utility stocks. The published academic literature does not  
5 support such a claim.

6 **Q. WHAT GROWTH RATES SHOULD MR. ROTHSCHILD HAVE USED?**

7 A. For reasons outlined above, Mr. Rothschild should have relied on analyst growth  
8 forecasts as most expert witnesses do, including the other ROE witnesses in this  
9 proceeding.

10 **Q. IS MR. ROTHSCHILD CONTRADICTING HIMSELF WITH REGARDS TO**  
11 **THE USE OF DIVIDEND GROWTH VS EARNINGS GROWTH IN THE DCF**  
12 **MODEL?**

13 A. Yes, he is. When asked whether the DCF model still relies on earnings growth, he  
14 answered "yes."<sup>26</sup> But earlier, he states that the use of earnings growth overstates the  
15 cost of equity.<sup>27</sup>

16 **Q. WHAT DO YOU CONCLUDE FROM MR. ROTHSCHILD'S DCF ANALYSES?**

17 A. Mr. Rothchild's exclusively relies on a flawed methodology and should be accorded very  
18 little weight, if any, by the Commission.

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<sup>25</sup> Cal PA Testimony (Rothschild) at 62:8-9.

<sup>26</sup> *Id.* at 21:5-7.

<sup>27</sup> *Id.* at 13:17-20.

1           **E.      CAPM Risk-Free Rate**

2           **Q.      DOES MR. ROTHSCHILD PERFORM A CAPM ANALYSIS?**

3           A.      Yes, he does. To implement the CAPM, three quantities are required: the risk-free rate  
4           (RF), beta ( $\beta$ ), and the market risk premium (MRP). As shown on Table 8 page 30, Mr.  
5           Rothschild uses a risk-free rate of 2.12%, a beta range of 0.67 – 0.75, and MRP range of  
6           6.99% - 9.47%.

7           **Q.      DR. MORIN, DO YOU AGREE WITH MR. ROTHSCHILD’S BETA**  
8           **ESTIMATES IN THE CAPM ANALYSIS?**

9           A.      Yes, I agree with his estimates, although I do not agree with his method of derivation. I  
10          note that the upper end of his beta range, 0.75, is actually SDG&E’s parent company beta  
11          reported by Value Line for Sempra Energy, one of the highest in the industry.

12          **Q.      DR. MORIN, DO YOU AGREE WITH MR. ROTHSCHILD’S MRP ESTIMATES**  
13          **IN THE CAPM ANALYSIS?**

14          A.      Yes, I agree with his resulting estimates, although I do not agree with his method of  
15          derivation. The lower part of his range of 6.99% is the same estimate I use in my own  
16          CAPM implementation, although it is derived from a different direction.

17          **Q.      DO YOU AGREE WITH MR. ROTHSCHILD’S RISK-FREE RATE ESTIMATE?**

18          A.      No, I do not. As proxy for the risk-free rate, Mr. Rothschild uses the current yield on  
19          one-year Treasury notes of 2.12% over the previous three months. As I show below, Mr.  
20          Rothschild should have used the consensus long-term interest rate forecast of 4.20%.  
21          This correction alone would raise his CAPM estimates substantially by 2.08% (4.20% –  
22          2.12% = 2.08%).

1 **Q. PLEASE COMMENT ON MR. ROTHSCHILD'S PROXY FOR THE RISK-FREE**  
2 **RATE IN THE CAPM.**

3 A. I disagree with this proxy for two reasons. First, the appropriate proxy for the risk-free  
4 rate in the CAPM is the return on long-term Treasury bonds, and not the yield on short-  
5 term one-year Treasury notes. This is simply because common stocks are very long-term  
6 instruments more akin to long-term bonds than to one-year notes.

7 Because common equity has an infinite life-span, the inflation expectations  
8 embodied in its market-required rate of return will be equal to the inflation rate  
9 anticipated to prevail over the long-term. The same expectation should be embodied in  
10 the risk free rate used in applying the CAPM model. Among U.S. Treasury securities,  
11 U.S. 30-year Treasury bonds have the longest term to maturity. Therefore, U.S. 30-year  
12 Treasury bonds will more closely incorporate within their yield the inflation expectations  
13 that influence the prices of common stocks than do U.S. Treasury bills or Treasury notes.  
14 The correct proxy for the risk-free rate in the CAPM is the return on 30-year Treasury  
15 bonds, and not the yield on one-year Treasury notes. I note that is standard procedure  
16 practiced by most financial economists. Second, as I show below, Mr. Rothschild should  
17 have relied on prospective interest rates rather than on current interest rates.

18 **Q. WHY SHOULD MR. ROTHSCHILD HAVE RELIED ON PROSPECTIVE RISK-**  
19 **FREE RATES IN THE CAPM ANALYSIS?**

20 A. Mr. Rothschild uses current interest rates in his CAPM analysis instead of forecast  
21 interest rates, and objects to my use of forecast interest rates. But given that this  
22 proceeding is to provide ROE estimates for future proceedings, forecast interest rates are  
23 far more relevant. I note that Mr. Rothschild generously uses projections of other



1 financial variables in all his analyses, including dividend growth projections and expected  
2 return projections by Value Line. So, it is a mystery as to why he uses projections for  
3 most of his financial variables, but not for interest rates.

4 Mr. Rothschild should have relied on projected long-term Treasury interest rates  
5 for the simple reason that investors price securities on the basis of long-term  
6 expectations, including interest rates. Cost of capital models, including the CAPM, are  
7 prospective (*i.e.* forward-looking) in nature and must take into account current market  
8 expectations for the future because investors price securities on the basis of long-term  
9 expectations, including interest rates. As Mr. Rothschild himself states, stock prices are  
10 based on investor expectations.<sup>28</sup>

11 All the economic forecasts that I am aware of, as shown on Table 1 below,  
12 anticipate a substantial and steady increase in interest rates from 2019 onward. In  
13 summary, the average projected long-term interest rate on 30-year Treasury bonds is  
14 4.2%.

15 Based on this consistent evidence from various sources, a long-term bond yield  
16 forecast of 4.2% should have been used for purposes of a forward-looking CAPM  
17 analysis in the current economic environment. As a result, Mr. Rothschild's CAPM  
18 estimates are understated by 130 basis points ( $4.20\% - 2.12\% = 2.08\%$ ) from this  
19 omission alone.

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<sup>28</sup> *Id.* at 26:1-2.

**Table 1. Forecast Yields on 30-year U.S. Treasury Bonds**

Source	Forecast
Value Line Economic Forecast	4.0%
U.S. Energy Information Administration	4.6%
Bureau of Labor Statistics	4.2%
Congressional Budget Office	4.2%
Economic Report of the President 2018	4.1%
White House Budget 2019	4.2%
IHS (Global Insight)	3.8%
<b>AVERAGE</b>	<b>4.2%</b>

**F. Empirical CAPM**

**Q. DO YOU AGREE WITH MR. ROTHSCHILD’S USE OF THE RAW FORM OF THE CAPM TO ESTIMATE THE COST OF CAPITAL?**

A. No, I do not. I believe that the plain vanilla version of the CAPM should be supplemented by the more refined version of the CAPM. There have been countless empirical tests of the CAPM to determine to what extent security returns and betas are related in the manner predicted by the CAPM. The results of the tests support the idea that beta is related to security returns, that the risk-return tradeoff is positive, and that the relationship is linear. The contradictory finding is that the risk-return tradeoff is not as steeply sloped as predicted by the CAPM. That is, low-beta securities earn returns somewhat higher than the CAPM would predict, and high-beta securities earn less than predicted returns. In other words, a CAPM-based estimate of the cost of capital underestimates the return required from low-beta securities and overstates the return from high-beta securities, based on the empirical evidence. This relationship is well documented in the finance literature and should have been acknowledged by Mr. Rothschild in his CAPM analysis.

1           The empirical form of the CAPM that I used in my direct testimony refines the  
2 standard form of the CAPM to account for this phenomenon. As discussed in Appendix  
3 A of my direct testimony, the downward-bias inherent in the CAPM is particularly  
4 significant for low-beta securities, such as the electric utilities used by Mr. Rothschild.  
5 Mr. Rothschild's CAPM estimates of equity costs are understated by about 50 basis  
6 points from this bias alone.

7 **Q. DR. MORIN, PLEASE PROVIDE A SUMMARY OF THE CORRECTIONS TO**  
8 **MR. ROTHSCHILD'S CAPM ESTIMATES.**

9 A. Table 2 summarizes the principal reasons why Mr. Rothschild's CAPM results understate  
10 an appropriate ROE for SDG&E:

11 **Table 2. Adjustment to Mr. Rothschild's CAPM Results**

<u>Source</u>	<u>Basis Points</u>
Risk-Free Rate	208
CAPM understatement	50
Flotation Cost	20
Total Adjustment	----- 278

12           Correction of these understatements would increase Mr. Rothschild's CAPM  
13 results by 278 basis points (2.78%), that is, from his midpoint CAPM estimate of 8.05%  
14 to 10.83%, which is close to my recommended base return of 10.9% for SDG&E.  
15

1           **G.     Risk Adjustment**

2   **Q.     DID MR. ROTHSCHILD ADJUST HIS RECOMMENDED RETURN ON**  
3           **EQUITY UPWARD IN ORDER TO ACCOUNT FOR THE COMPANY’S**  
4           **HIGHER RELATIVE RISK?**

5   A.     No, he did not. I was astonished by Mr. Rothschild’s statement that wildfire liability risk  
6           does not impact the cost of equity.<sup>29</sup> Given the multiples downgrades of the California  
7           electric utilities’ bonds over the past year and the rationales for the downgrades (despite  
8           SDG&E not facing any wildfire liability during that time), and given the higher than  
9           average DCF estimates and beta estimates of SDG&E’s parent company Sempra Energy,  
10          relative to its peers, it is transparent that wildfire risks and ancillary issues has impacted  
11          the cost of equity.<sup>30</sup> I refer to my direct testimony, as well as the direct and supplemental  
12          testimony of SDG&E’s other witnesses, for a detailed discussion of the Company’s  
13          higher relative risks, including wildfire-related risks.

14           **H.     Capital Structure Recommendation**

15   **Q.     WHAT CAPITAL STRUCTURE DOES MR. ROTHSCHILD RECOMMEND?**

16   A.     Mr. Rothschild recommends a fictitious capital structure consisting of 48% long-term  
17          debt and 52% common equity capital based on his review of the actual capital structures  
18          of the parent companies in his peer group of utilities.

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<sup>29</sup> Cal PA Testimony (Rothschild) at 49:21-22.

<sup>30</sup> Cf. *The Prepared Direct Testimony of Richard McCann, PH.D. on Authorized Cost of Capital for Utility Operations for 2020 on behalf of The Environmental Defense Fund* (August 1, 2019), at 14 (acknowledging that Sempra Energy’s stock is being discounted 40 basis points due to SDG&E’s catastrophic wildfire liability risks); FEA Testimony (O’Donnell) at 64 (acknowledging that Sempra Energy’s stock is “still in the shadow of inverse condemnation”).

1 **Q. DO YOU AGREE WITH MR. ROTHSCHILD'S APPROACH BASED ON A**  
2 **REVIEW OF THE ACTUAL CAPITAL STRUCTURES OF UTILITY**  
3 **COMPANIES?**

4 A. No, I do not. Mr. Rothschild used the wrong comparison group. He should have relied  
5 on the capital structures of operating utility companies rather than on those of the parents.  
6 As I showed in my direct testimony, the average common equity ratio of the operating  
7 utility companies in my peer group is in the range of 53% - 54%,<sup>31</sup> in contrast to Mr.  
8 Rothschild's 52% ratio.

9 **I. Responses to Mr. Rothschild's Criticisms**

10 **1. DCF Dividend Growth Rates**

11 **Q. SHOULD MR. ROTHSCHILD HAVE CONSIDERED DIVIDEND GROWTH**  
12 **PROXIES IN APPLYING THE DCF MODEL?**

13 A. No, he should not for several reasons. First, earnings growth provides a more meaningful  
14 guide to investors' long-term growth expectations. After all, it is growth in earnings that  
15 will support future dividends and share prices. Moreover, as a practical matter, there are  
16 far more earnings forecasts available from the investment community than dividend  
17 forecasts, which attests to their importance to investors.

18 Second, it would not be unreasonable to expect electric utilities to lower their  
19 dividend payout ratio over the next several years in response to the need to rely more  
20 heavily on internal financing sources in light of substantial planned capital expenditures.  
21 In other words, earnings and dividends are not expected to grow at the same rate in the  
22 future. Whenever the dividend payout ratio is expected to change, the intermediate

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<sup>31</sup> Ex. SDG&E-04 (Morin) at 61:14.

1 growth rate in dividends cannot equal the long-term growth rate, because  
2 dividend/earnings growth must adjust to the changing payout ratio. The assumptions of  
3 constant perpetual growth and constant payout ratio are clearly not met.

4 In short, dividend growth rates are unlikely to provide as meaningful a guide to  
5 investors' growth expectations for electric utilities as earnings. Moreover, in the second  
6 stage of his non-constant growth DCF model, Mr. Rothschild switches from dividend  
7 growth to book value growth. No explanation is offered for the switch in growth metric.  
8 Nor does Mr. Rothschild offer any explanation as to how book value growth correlates  
9 with earnings growth and investor cash flows, if at all.

## 10 2. Quarterly Versus Annual DCF Model

11 **Q. DR. MORIN, DID YOU RELY ON THE QUARTERLY DCF MODEL IN YOUR  
12 COST OF CAPITAL TESTIMONY?**

13 A. No, I did not, contrary to Mr. Rothschild's statement<sup>32</sup> on page 66 of his testimony. I  
14 relied on the standard textbook annual DCF model:  $K = D_1/P + g$ .

15 **Q. HOW DO YOU RESPOND TO MR. ROTHSCHILD'S COMMENT WITH  
16 REGARDS TO THE DCF MODEL USED IN YOUR TESTIMONY, AND IS HE  
17 CORRECT?**

18 A. Mr. Rothschild is under the mistaken impression that I relied on the quarterly version of  
19 the DCF model, which I did not, and argues that it is inappropriate to do so.<sup>33</sup> His  
20 spurious argument is that because dividends are paid quarterly to investors, the company

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<sup>32</sup> Cal PA Testimony (Rothschild) at 66:4-9.

<sup>33</sup> *Id.* at 65-66.

1 receives revenues throughout the year on a continuous basis, which compounds over time  
2 and that shareholders are paid compounded earnings through dividends. Therefore, he  
3 concludes that the annual DCF model is required. The problem is that Mr. Rothschild  
4 has confused investor returns with company returns. What we are trying to ascertain  
5 with the DCF model is the investor return; not the company return. While the company  
6 receives collected revenues from customers continuously, the investor receives dividends  
7 every quarter and not continuously. In any event, although the company receives  
8 revenues on a continuous basis, the working capital component of the rate base  
9 recognizes this fact and is adjusted accordingly.

### 10 3. Arithmetic vs Geometric Averages

11 **Q. IS IT APPROPRIATE TO USE GEOMETRIC AVERAGES IN MEASURING**  
12 **HISTORICAL MARKET RISK PREMIUMS IN A CAPM ANALYSIS?**

13 A. No, it is not. Mr. Rothschild argues that I and other witnesses in this proceeding should  
14 have relied on the geometric average of stock returns minus bond returns rather than on  
15 the conventional and correct arithmetic average.<sup>34</sup>

16 As I discussed extensively in my direct testimony,<sup>35</sup> whenever relying on  
17 historical risk premiums, only arithmetic average returns over long periods are

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<sup>34</sup> *Id.* at 78.

<sup>35</sup> See also Morin, R. A., *The New Regulatory Finance*, Public Utilities Reports, Inc., Chapter 4 (2006), for a discussion regarding the theoretical underpinnings, empirical validation, and the consensus of academics on why geometric means are inappropriate for forecasting and estimating the cost of capital.

1 appropriate for forecasting and estimating the cost of capital. Geometric average returns  
2 are not.<sup>36</sup>

3 There is no theoretical or empirical justification for the use of geometric mean  
4 rates of return in estimating the cost of capital. Briefly, the disparity between the  
5 arithmetic average return and the geometric average return raises the question as to what  
6 purposes should these different return measures be used. The answer is that the  
7 geometric average return should be used for measuring historical returns that are  
8 compounded over multiple time periods. The arithmetic average return should be used for  
9 future-oriented analysis, where the use of expected values is appropriate. It is  
10 inappropriate to average the arithmetic and geometric average return; they measure  
11 different quantities in different ways.

12 Geometric means are properly used in evaluating historic performance of stocks  
13 or portfolios of stocks, whereas determining investor expectations, which define the cost  
14 of equity capital, requires use of arithmetic means. Both chapter 6 of my book *The New*  
15 *Regulatory Finance*<sup>37</sup> and Duff & Phelps' Valuation Yearbook 2019 explain this issue in  
16 detail, provide illustrative mathematical examples, and cite authoritative financial texts,  
17 all of which confirm the need to use arithmetic means, and not geometric means, to  
18 properly estimate a utility's cost of equity.

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<sup>36</sup> See Roger A. Morin, *Regulatory Finance: Utilities' Cost of Capital*, Chapter 11 (1994); Roger A. Morin, *The New Regulatory Finance: Utilities' Cost of Capital*, Chapter 4 (2006); Richard A Brealey, et al., *Principles of Corporate Finance* (8<sup>th</sup> ed. 2006).

<sup>37</sup> Morin, R. A., *The New Regulatory Finance*, Public Utilities Reports, Inc., Chapter 6 (2006).



1 **Q. HOW DO YOU RESPOND TO MR. ROTHSCHILD'S NUMERICAL EXAMPLE**  
2 **SHOWING THE FALLACY OF ARITHMETIC RETURNS?**

3 A. The example actually proves my point that if relying on geometric means, investors  
4 would require the same expected return to invest in both of these stocks, even though the  
5 volatility of returns in Stock A is very high while Stock B exhibits perfectly stable  
6 returns. That is clearly contrary to the most basic financial theory; that is, the higher the  
7 risk, the higher the expected return.

8 **4. Flotation Cost Adjustment**

9 **Q. WHAT IS MR. ROTHSCHILD'S POSITION ON THE ISSUE OF FLOTATION**  
10 **COSTS?**

11 A. According to Mr. Rothschild, such costs are unwarranted.

12 **Q. DO YOU AGREE WITH MR. ROTHSCHILD'S ARGUMENT AGAINST A**  
13 **FLOTATION COST ALLOWANCE?**

14 A. No, I do not. Mr. Rothschild suggests that a flotation cost adjustment is unwarranted  
15 when stock prices trade above book value.<sup>38</sup> I disagree. A stock's market-to-book value  
16 is irrelevant. That market prices are above book value does not change the fact that a  
17 portion of the capital contributed by equity investors is not available to earn a return  
18 because it is paid out as flotation costs. The simple fact of the matter is that in issuing  
19 common stock, the company's common equity account is credited by an amount less than  
20 the market value of the issue, so that the company must earn slightly more on its reduced  
21 equity base in order to produce a return equal to that required by shareholders. The

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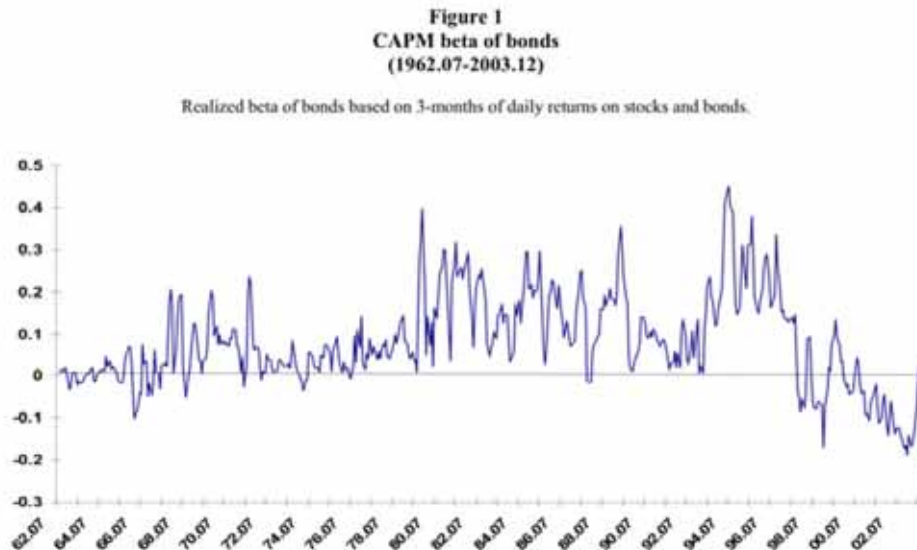
<sup>38</sup> Cal PA Testimony (Rothschild) at 93.

1 stock's market-to-book value is irrelevant. The costs are there irrespective of whether the  
2 stock trades above, below, or at book value.

3 **5. U.S. Treasury Bond Betas**

4 **Q. HOW DO YOU RESPOND TO MR. ROTHSCHILD'S ARGUMENT THAT**  
5 **LONG-TERM TREASURY BONDS ARE INAPPROPRIATE PROXIES FOR**  
6 **THE RISK-FREE RATE IN A CAPM ANALYSIS?**

7 A. Mr. Rothschild argues that long-term U.S. Treasury bonds are inappropriate proxies for  
8 the risk-free rate because their beta risk measures are non-zero.<sup>39</sup> I disagree. In fact, U.S.  
9 Treasury bond betas are effectively zero regardless of maturity. This is based on a  
10 comprehensive study by Israel, Pahlhares, and Richardson published in the second  
11 quarter of 2018 edition of the Journal of Investment Management, *Common Factors in*  
12 *Corporate Bond Returns*. As seen below from Figure 1 from that study, the average beta  
13 of Treasury bonds is effectively zero.



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<sup>39</sup> *Id.* at 63:20-21, 85:7-8.

1 **Q. PLEASE DISCUSS MR. ROTHSCHILD'S VIEWS ON MARKET TO BOOK**  
2 **(M/B) RATIOS.**

3 A. In various places throughout his testimony, Mr. Rothschild's argues that because current  
4 M/B ratios for electric utilities exceeds 1.0, allowed returns by regulators exceed the cost  
5 of equity capital for utilities. For example, Mr. Rothschild contends that targeting a M/B  
6 ratio near 1.0 is optimal.<sup>40</sup> Mr. Rothschild states that a M/B above 1.0 means that a  
7 company is earning more than its cost of equity, and allowed returns should be reduced.<sup>41</sup>  
8 In other words, Mr. Rothschild is implying that state utility commissions should lower  
9 the allowed return on equity so that the stock price will decline to book value. I presume  
10 from these statements that Mr. Rothschild finds it desirable that stock prices drop from  
11 the current M/B ratio value in excess of 1.0 for most electric and gas utilities, to the  
12 desired M/B ratio range of 1.0.

13 There are several reasons why M/B ratios are largely irrelevant in establishing  
14 rates of regulated utilities, and Mr. Rothschild's views on the role of M/B ratios in  
15 regulation are misguided.

16 First, Mr. Rothschild's position implies that regulators should set a return on  
17 equity to produce a M/B ratio of 1.0. This is erroneous. The stock price is set by the  
18 market, not by regulators. The M/B ratio is the result of regulation, not its starting point.  
19 The regime of regulation envisioned by Mr. Rothschild (*i.e.*, that the regulator will set an  
20 allowed rate of return so as to produce a M/B ratio of close to 1.0) presumes that  
21 investors commit capital to a utility with a M/B in excess of 1.0, knowing full well that

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<sup>40</sup> *Id.* at 48:12-13.

<sup>41</sup> *Id.* at 100:1-4, 104:1-5.

1 they will be inflicted a capital loss by regulators. Such behavior on the part of investors  
2 is certainly not a realistic or accurate view of investment or regulation.

3 Second, the traditional M/B ratio does not reflect the replacement cost of a  
4 company's assets, consistent with *Bluefield*<sup>42</sup> and *Hope*.<sup>43</sup> The fundamental goal of  
5 regulation should be to set the expected economic profit for a public utility equal to the  
6 level of profits expected to be earned by firms of comparable risk; in short, to emulate a  
7 competitive result, so as to assure the firm's credit and to attract needed capital. For  
8 unregulated firms, the natural forces of competition will ensure that in the long-run the  
9 market value of these firm's securities equals the replacement cost of their assets. This  
10 suggests that a fair and reasonable price for a public utility's common stock is one that  
11 produces equality between the market price of its common equity and the replacement  
12 cost of its physical assets. The latter circumstance will not necessarily occur when the  
13 M/B ratio is near 1.0. Only when the market value of the firm's common equity equals  
14 the value of the firm's equity at replacement cost will equality hold.

15 In an inflationary period, the replacement cost of a firm's assets may increase  
16 more rapidly than its book equity. To avoid the resulting economic confiscation of  
17 shareholders' investment in real terms, the allowed rate of return should produce a M/B  
18 ratio which provides a Q-ratio of 1.0 or a Q-ratio equal to that of comparable firms.<sup>44</sup> It

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<sup>42</sup> *Bluefield Water Works & Improvement Co. v. Pub. Serv. Comm'n of W. Va.*, 262 U.S. 679 (1923).

<sup>43</sup> *Fed. Power Comm'n v. Hope Nat'l Gas Co.*, 320 U.S. 591 (1944).

<sup>44</sup> The relationship between the market value of a firm's securities and the replacement cost of its assets is embodied in the Q-ratio. The Q-ratio is defined as the market value of a firm's securities divided by the replacement cost of its assets. If  $Q > 1.0$ , a firm has an incentive to invest because the value of the firm's securities exceeds the replacement cost of assets, that is, the firm's return on its investments exceeds its cost of capital. Conversely, if  $Q < 1.0$ , a firm has a disincentive to invest in new plant. In final long-run equilibrium, the Q-ratio is driven to 1.0.

1 is quite likely that M/B ratios will exceed 1.0 if inflation increases the replacement cost  
2 of a firm's assets at a faster pace than book equity. This explains in part why utility M/B  
3 ratios have remained well above 1.0 over the past two decades.

4 Stock prices above book value are common for utility stocks, and indeed for all of  
5 the major market indexes. As I discuss in my direct testimony, the market for capital  
6 investment is a competitive one. If regulators artificially lowered utility ROEs to reflect  
7 book value and not investors' expectations, then investors would simply take their capital  
8 and invest in non-utility assets. It is obvious that investors and regulators through their  
9 rate case decisions do not subscribe to Mr. Rothschild's position that utilities that have  
10 market prices above book value are over-earning. Otherwise, regulators would not grant  
11 rate increases for any utility whose stock price was above book value, and investors  
12 would never bid up the price of stock above book value.

13 **Q. DO YOU AGREE WITH MR. ROTHSCHILD'S DENUNCIATION OF**  
14 **REGULATORS?**

15 A. Absolutely not. In a withering and rather impertinent comment on regulators, including  
16 this Commission, and in an attempt to justify his draconian positions, Mr. Rothschild  
17 concludes that regulators have been persistently wrong for years by allowing returns that  
18 are higher than the cost of equity.<sup>45</sup> Aside from his view that regulatory commissions  
19 have been consistently wrong, there is absolutely no empirical foundation for Mr.  
20 Rothschild's recommendation.

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<sup>45</sup> Cal PA Testimony (Rothschild) at 49:11-15.

1           **J. Conclusion**

2           **Q. WOULD THE ADOPTION OF MR. ROTHSCHILD’S RECOMMENDED ROE**  
3           **FURTHER ENDANGER SDG&E’S CREDIT QUALITY?**

4           A. Yes, it certainly increases the probability of a further deterioration in SDG&E’s  
5           creditworthiness. Decreases in SDG&E’s authorized ROE, such as the decrease  
6           recommended by Mr. Rothschild, could very well trigger a further downgrade of  
7           SDG&E’s credit rating.<sup>46</sup> A further weakening of SDG&E’s financial viability and  
8           earnings power at a time when SDG&E needs to attract significant external capital on  
9           reasonable terms is ill-advised.

10          **Q. HAS MR. ROTHSCHILD PRESENTED ANY ARGUMENTS IN HIS**  
11          **TESTIMONY THAT WOULD CAUSE YOU TO ALTER ANY OF YOUR**  
12          **RECOMMENDATIONS AND METHODOLOGIES?**

13          A. No, he has not.

14          **Q. WHAT DO YOU CONCLUDE FROM MR. ROTHSCHILD’S TESTIMONY?**

15          A. I conclude the following:

16               1. Mr. Rothschild’s recommended ROE of 8.49%, if adopted, would result in one of the  
17               lowest ROE authorized in the vertically integrated electric utility industry, and would  
18               cause adverse consequences on the Company’s creditworthiness, its financial integrity,  
19               the Company’s capital raising ability, and ultimately its customers. Allowed and  
20               expected ROEs for Mr. Rothschild’s peer group of companies substantially exceed his  
21               recommended ROE for SDG&E.

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<sup>46</sup> See, e.g., Moody’s July 29 Report at 2; Moody’s, Rating Action: *Moody’s affirms San Diego Gas & Electric Company’s ratings; outlook remains negative*, dated July 12 at 1 (“Moody’s July 12 Report”).

1 2. Mr. Rothschild's dividend yield component is understated because it is not consistent  
2 with the annual form of the DCF model.

3 3. Mr. Rothschild's dividend yield component is understated because it does not allow  
4 for flotation costs and, as a result, a legitimate expense is left unrecovered. His DCF  
5 results, as well as the results from the other three methodologies, are thus understated by  
6 20 basis points.

7 4. In order to estimate the growth component of the DCF model, Mr. Rothschild has  
8 solely relied on the so-called retention ratio method, which is logically circular for it  
9 requires its user to assume the answer to begin with. Analysts growth forecasts are  
10 ignored and so are historical growth rates. In short, Mr. Rothschild's two DCF estimates,  
11 which largely drive his recommendation, should be dismissed because they are derived  
12 from a logically circular methodology.

13 5. Mr. Rothschild's estimate of the CAPM risk-free rate is too low because it is based on  
14 one-year Treasury note yields rather than on long-term Treasury bond yields, and because  
15 it is based on current interest rates rather than on projected rates. As a result, his CAPM  
16 estimates are understated by 2.08% from this omission alone.

17 6. The basic version of the CAPM used by Mr. Rothschild understates the Company's  
18 cost of equity for low-beta securities by 50 basis points. Correction of Mr. Rothschild's  
19 various understatements in his CAPM analysis would increase his CAPM results by  
20 2.78%.

1 **Q. WHAT ARE THE BASIC CONCLUSIONS OF YOUR REBUTTAL TO MR.**  
2 **ROTHSCHILD’S COST OF EQUITY TESTIMONY?**

3 A. Mr. Rothschild seriously understates SDG&E’s cost of common equity. A proper  
4 application of cost of capital methodologies would give results substantially higher than  
5 those that he obtained. I also find Mr. Rothschild’s testimony to contain several  
6 contradictions and inconsistencies and find his views on several aspects of cost of capital  
7 methodology to be misguided.

8 **III. REBUTTAL TO DR. GRIFFING’S TESTIMONY**

9 **Q. PLEASE SUMMARIZE DR. GRIFFING’S RATE OF RETURN**  
10 **RECOMMENDATION.**

11 A. Dr. Griffing recommends a ROE of 9.15% for SDG&E, which I believe would be among  
12 the lowest authorized return in the vertically integrated electric utility industry, despite  
13 the fact that SDG&E’s risk exceeds the average risk in the electric utility industry at this  
14 time.<sup>47</sup> In determining the cost of equity, Dr. Griffing applies a DCF analysis to a group  
15 of 18 combination gas and electric utilities. This study produces a mean result of 8.74%  
16 and a median result of 8.80%.<sup>48</sup> As reasonableness checks on his DCF results, Mr.  
17 Griffith applies a two-stage DCF analysis on which he places no weight, and performs a  
18 CAPM analysis on which he places partial weight. The CAPM analysis produces results  
19 of 9.00% and 6.78% using forward-looking and historical data, respectively.<sup>49</sup> In contrast

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<sup>47</sup> See UCAN and POC Testimony (Griffing) at 47 (admitting that his ROE recommendation would put “SDG&E among the low end of ROEs for U.S. electric operating companies.”).

<sup>48</sup> UCAN and POC Testimony (Griffing) at 29, 46 (Table 4).

<sup>49</sup> *Id.* at 46 (Table 4).



1 to his previous practice, Dr. Griffing chose not to rely on the Empirical CAPM. Finally,  
2 he examines recently authorized ROEs for electric utilities, which average 9.71%.<sup>50</sup>

3 **Q. HOW DOES DR. GRIFFING ARRIVE AT HIS FINAL RECOMMENDATION OF**  
4 **9.15%?**

5 A. On page 46, he summarizes all his ROE results in tabular fashion as follows:

6 **Table 3: Griffing ROE Results**

<b>Constant Growth DCF</b>	<b>Mean</b>	<b>Median</b>
	8.74%	8.80%
<b>Multistage DCF</b>	<b>Mean</b>	<b>Median</b>
	8.49%	8.41%
<b>CAPM</b>	<b>S&amp;P 500</b>	<b>Historical</b>
	9.00%	6.78%
<b>Allowed Risk Premium</b>	9.71%	

7  
8 From these seven results, Dr. Griffing ignores all the median results and rejects  
9 the results from the Multistage DCF model and the Historical CAPM model. He is left  
10 with three of the seven results: 8.74%, 9.00%, and 9.71%. The average of the three  
11 remaining results is 9.15%, which is his recommended ROE for SDG&E.

12 **Q. WHAT IS YOUR GENERAL REACTION TO DR. GRIFFING'S COST OF**  
13 **COMMON EQUITY RECOMMENDATION?**

14 A. My second general reaction to his recommendation is that Dr. Griffing's recommended  
15 9.15% ROE lies outside the zone of currently authorized ROEs for vertically integrated  
16 electric utilities in the United States. As he himself points out, the current average

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<sup>50</sup> *Id.*

1 authorized ROE for vertically integrated electric utilities is 9.71%<sup>51</sup> which is above Dr.  
2 Griffing's recommended 9.15%, notwithstanding the fact that SDG&E remains one of the  
3 riskiest electric utility in the industry.

4 **Q. WHAT ARE THE BASIC CONCLUSIONS OF YOUR REBUTTAL TESTIMONY**  
5 **TO DR. GRIFFING'S COST OF EQUITY TESTIMONY?**

6 A. While I agree with several of Dr. Griffing's procedures and methodologies, as I will  
7 demonstrate below, Dr. Griffing understates the appropriate ROE for SDG&E. If some  
8 of Dr. Griffing's results are amended to reflect proper data inputs to the financial models,  
9 Dr. Griffing's revised ROE recommendation would be significantly higher.

10 **Q. PLEASE SUMMARIZE YOUR COMMENTS ON DR. GRIFFING'S**  
11 **TESTIMONY.**

12 A. I stress from the start that I agree with several of Dr. Griffing's views and procedures in  
13 estimating SDG&E's cost of equity. Dr. Griffing's procedures and methodologies are  
14 generally sound and in keeping with the practices of finance professionals. For example,  
15 I agree with: (i) his use of analysts' growth forecasts as proxies for expected growth in  
16 the classic constant growth DCF model and first stage of the multi-stage DCF model; (ii)  
17 the beta estimates in the CAPM analysis; (iii) the market risk premium estimates in the  
18 CAPM analysis; and (iv) the flotation cost adjustment.

19 I disagree with Dr. Griffing on the following grounds:

20 **1. Return Recommendation Outside the Mainstream.** Dr. Griffing's recommended  
21 ROE is outside the zone of currently authorized ROEs for utilities in the United States.

22 As he cites on Table 3 of his testimony, the average authorized ROE in the electric utility

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<sup>51</sup> UCAN and POC Testimony (Griffing) at 46 (Table 4).

1 industry is approximately 9.71%,<sup>52</sup> which exceeds his recommended 9.15% despite the  
2 fact that SDG&E's risks significantly exceed those of the industry.

3 **2. Inconsistency with Prior Testimonies.** In contrast to his recent testimonies,<sup>53</sup> Dr.  
4 Griffing chose not to rely on the results of Empirical CAPM model, and did not  
5 arbitrarily select and weigh results from the various methodologies in the same manner as  
6 he did in prior proceedings.

7 **3. Risk-Free Rate.** Dr. Griffing has relied on an inappropriate risk-free rate proxy in  
8 implementing the CAPM, understating those results by 163 basis points (1.63%).

9 **4. Risk Adjustment.** Dr. Griffing failed to allow for SDG&E's higher risk relative to  
10 that of his peer group.

11 **5. Capital Structure Recommendation.** His recommended capital structure consisting  
12 of 52% common equity is at odds with the actual capital structures of operating electric  
13 utility companies and with SDG&E's actual capital structure.

14 I shall now discuss each criticism in turn as well as respond to Dr. Griffing's  
15 criticisms of my testimony which are largely unfounded.

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<sup>52</sup> *Id.* at 45 (Table 3).

<sup>53</sup> *See, e.g.,* Mr. Griffing's testimony before the Oklahoma Corporation Commission in Case No. PUD 201800140 involving the Oklahoma Gas and Electric Company (*In the Matter of the Application of Oklahoma Gas and Electric Company for an Order of the Commission Authorizing Applicant to Modify its Rates, Charges, and Tariffs for Retail Electric Service in Oklahoma*).

1           **A.     Allowed Returns**

2           **Q.     HOW DOES DR. GRIFFING’S RECOMMENDED ROE COMPARE WITH**  
3           **CURRENTLY ALLOWED ROES IN THE INDUSTRY?**

4           A.     It is out of line. The average authorized ROE in the vertically integrated electric utility  
5           industry is approximately 9.71% as cited in Dr. Griffing’s testimony,<sup>54</sup> which exceeds his  
6           recommended 9.15%.

7           **B.     Inconsistencies with Prior Testimonies**

8           **Q.     HAS MR. GRIFFIN RELIED ON THE EMPIRICAL CAPM IN RECENT**  
9           **TESTIMONIES?**

10          A.     Yes, he has, as I previously stated.

11          **Q.     WHAT RESULTS WOULD HE HAVE OBTAINED HAD HE FOLLOWED SUIT**  
12          **IN THIS PROCEEDING?**

13          A.     I have replicated the Empirical CAPM model used by Dr. Griffing in past testimonies  
14          using his own data inputs, namely a risk-free rate of 2.57%, a beta of 0.58, a market risk  
15          premium of 10.71%, and flotation cost. The Empirical CAPM estimate was 10.11%.

16          **Q.     HOW WOULD THIS HAVE AFFECTED HIS RECOMMENDED ROE?**

17          A.     Adding the Empirical CAPM result to the three results chosen by Dr. Griffing from his  
18          table of results shown above, the average ROE is 9.4%. Nowhere does Dr. Griffing  
19          explain why he departed from his past practices.

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<sup>54</sup> UCAN and POC Testimony (Griffing) at 45.

1           **C.     CAPM Risk-Free Rate**

2           **Q.     WHAT INPUT DATA DOES A CAPM ANALYSIS REQUIRE?**

3           A.     To implement the CAPM, three quantities are required: the risk-free rate, beta, and the  
4           Market Risk Premium. As shown on Exhibit MFG-7 Schedule 8, Dr. Griffing uses a  
5           risk-free rate of 2.57%, a beta of 0.58, a prospective MRP of 10.71% and a historical-  
6           based MRP of 6.90%.

7           **Q.     DR. MORIN, DO YOU AGREE WITH DR. GRIFFING'S BETA ESTIMATE IN**  
8           **THE CAPM ANALYSIS?**

9           A.     Yes, I do. However, I point out that the beta risk measure of SDG&E's parent company  
10          Sempra Energy is 0.75, the highest in Dr. Griffing's peer group.

11          **Q.     DO YOU AGREE WITH DR. GRIFFING'S PROXY FOR THE RISK-FREE**  
12          **RATE IN THE CAPM ANALYSIS?**

13          A.     No, I do not. Dr. Griffing uses current interest rates in his CAPM analysis instead of  
14          forecast interest rates. As I have already discussed earlier in my rebuttal, given that this  
15          proceeding is to provide ROE estimates for future proceedings, forecasted interest rates  
16          are far more relevant. I note that Dr. Griffing generously uses projections of other  
17          financial variables in all his analyses. In particular, he relies extensively on earnings and  
18          growth projections in his DCF analyses and uses Value Line projections in deriving the  
19          MRP in his CAPM analysis. So, it is a mystery as to why he uses projections for most of  
20          his financial variables, but not for interest rates.

21                    In the same way that Dr. Griffing relies on forecasted growth rates in his DCF  
22                    analyses, he should have relied on interest rate forecasts as proxies for the risk-free rate in  
23                    the CAPM analysis.

1 **Q. IS DR. GRIFFING CORRECT THAT LITTLE WEIGHT SHOULD BE PLACED**  
2 **ON INTEREST RATE FORECASTS IN PROJECTING THE RISK-FREE RATE**  
3 **FOR CAPM ANALYSES BECAUSE THEY ARE OFTEN WRONG?**

4 A. No, he is not. On page 38-39, Dr. Griffing suggests that investors and regulatory bodies  
5 should place little weight on interest rate forecasts because they are often wrong, and  
6 therefore should not be used as proxies for the risk-free rate in implementing the CAPM.  
7 One wonders if Dr. Griffing feels the same way about analyst growth forecasts on which  
8 he heavily relies upon in his DCF analysis, which often turn out to be wrong.

9 Investors' required returns can and do shift over time with changes in capital  
10 market conditions; hence the importance of considering interest rate forecasts. The  
11 important point is not whether forecasts turn out to be accurate, but rather whether such  
12 forecasts are imbedded in investor expectations and stock prices. The empirical evidence  
13 demonstrates that stock prices do indeed reflect prospective financial input data.

14 Dr. Griffing also makes the point that current interest rates already reflect  
15 expectations.<sup>55</sup> This point ignores the fact this proceeding is to provide ROE estimates  
16 for a future test year. Hence, forecasted interest rates are far more relevant since rates are  
17 being set for the future.

18 In response to Dr. Griffing's point that I have not relied on Blue Chip interest rate  
19 forecasts, the reason is that the Blue Chip Financial Forecast is not necessarily the  
20 consensus and is but one forecast. It is certainly not representative of the broad  
21 consensus shown above on Table 1 in my rebuttal of Mr. Rothschild.

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<sup>55</sup> *Id.* at 38.

1 **Q. DR. MORIN, PLEASE PROVIDE A CORRECTED RENDITION OF DR.**  
2 **GRIFFING'S CAPM ESTIMATES.**

3 A. Dr. Griffing should have used a risk-free rate of 4.20% instead of 2.57%. Using the  
4 proper risk-free rate input data, the CAPM amended results are 1.63% higher (4.20% –  
5 2.57% = 1.63%).

6 **Q. HOW DOES THIS CORRECTION AFFECT DR. GRIFFING'S ROE**  
7 **RECOMMENDATION?**

8 A. Going back to Dr. Griffing's summary of results on Table 3 above, the 8.74% DCF result  
9 and 9.71% allowed return remain, and the CAPM result increases by 1.63% from 9.00%  
10 to 10.63%. Averaging the three results, his recommended ROE becomes 9.69%.

11 If Dr. Griffing had performed an Empirical CAPM analysis, as in his prior  
12 testimonies, his ECAPM estimate of 10.11% would become 1.63% higher as well, that is,  
13 from 10.11% to 11.74%. Averaging the latter result with Dr. Griffing's three main  
14 results (8.74% from the DCF, 9.71% from the allowed return, and 11.74% from the  
15 amended CAPM), Dr. Griffing's recommended ROE becomes 10.06%.

16 **Q. DO YOU AGREE WITH DR. GRIFFING'S ASSESSMENT OF THE CAPM?**

17 A. No, I do not. Dr. Griffing questions the value of the CAPM to measure equity return  
18 because of the requirements for judgment in selecting the input data and opines that the  
19 DCF is a more reliable method.<sup>56</sup>

20 My immediate reaction is that the same comments apply at least as forcefully to  
21 the DCF model, if not more so. I certainly agree that judgment must be employed in  
22 defining the inputs to the CAPM, but the same is equally true about the DCF model,

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<sup>56</sup> *Id.* at 37.

1 especially regarding the DCF growth component, which requires an extensive amount of  
2 judgment. There are additional judgmental elements with DCF, for example, the  
3 appropriate stock price, proxies for expected growth, sample size, risk comparability of  
4 the sample, and so on. All financial models require the use of judgment in defining the  
5 inputs data to these models, and the CAPM is no exception.<sup>57</sup>

6 **D. Risk Adjustment**

7 **Q. DID DR. GRIFFING APPLY AN UPWARD ADJUSTMENT TO HIS**  
8 **RECOMMENDED ROE IN ORDER TO RECOGNIZE SDG&E'S HIGHER**  
9 **RELATIVE RISK?**

10 A. No, he did not. I was astonished by his reasoning for not doing so. First, SDG&E's  
11 parent company, Sempra Energy has the second highest ROE estimate in his peer group,  
12 as shown at the bottom of his Exhibit MFG-6, Schedule 1. Second, Sempra Energy's  
13 beta of 0.75 is the second highest in his peer group, as shown on Exhibit MFG-7  
14 Schedule 2. Clearly, these two facts indicate Sempra Energy's much higher degree of  
15 relative risk. Third, SDG&E has experienced multiple downgrades from the credit rating  
16 agencies over the past two years due primarily to catastrophic wildfire liability risks and  
17 the corresponding regulatory environment.

18 Dr. Griffing argues that Sempra Energy's high DCF return estimate is the result of  
19 its high growth rate and not because of its higher risk. That is incorrect. All else  
20 remaining constant, a high growth rate would lead to a higher stock price, hence a lower

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<sup>57</sup> See Roger A. Morin, *New Regulatory Finance*, Public Utilities Reports, Inc.(2006), at 28 (“When measuring equity costs, which essentially deals with the measurement of investor expectations, no one single methodology provides a foolproof panacea . . . It follows that more than one methodology should be employed in arriving at a judgment on the cost of equity and that these methodologies should be applied across a series of comparable risk companies.”).



1 dividend yield and a lower return estimate. But that is not the case; Sempra Energy's  
2 dividend yields are virtually the same as the average dividend yield for the peer group.  
3 Moreover, Dr. Griffing does not fully explain why Sempra Energy's beta risk measure far  
4 exceeds that of its peers, 0.75 versus 0.58 average for the peer group.

5 Dr. Griffing states that adjustments to ROE for wildfire risk are not appropriate.<sup>58</sup>  
6 This is an astounding position, for high risks are always accompanied with high returns  
7 on capital markets (as evidenced by the aforementioned hard capital market data) and is  
8 inconsistent with the *Hope* and *Bluefield* standards, as all company risks must be  
9 considered in setting ROE.<sup>59</sup>

#### 10 **E. Capital Structure**

#### 11 **Q. WHAT CAPITAL STRUCTURE DOES DR. GRIFFING RECOMMEND?**

12 A. As stated on page 49, Dr. Griffing proposes a capital structure consisting of 52%  
13 common equity. He offers no analyses, no exhibits, no references, no calculations for  
14 this recommendation other than the fact that this capital structure has been in place during  
15 the credit downgrades, and is not cited as a reason for the multiple downgrades.<sup>60</sup> What  
16 Dr. Griffing should have done is examine the capital structures of the operating utility  
17 companies in his peer group – which do have common equity ratios in excess of 52%.  
18 Moreover, it is sound business practice to offset in part the high relative business risk of  
19 SDG&E by lowering its financial risk, that is, targeting a higher common equity ratio.  
20 And credit rating agencies have stated that their current rating for SDG&E assumes a

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<sup>58</sup> UCAN and POC Testimony (Griffing) at 55:16.

<sup>59</sup> See Ex. SDG&E-04 (Morin) at 8-10.

<sup>60</sup> UCAN and POC Testimony (Griffing) at 49:21-23.

1 56% common equity ratio, adding that a lower ratio could put negative pressure on the  
2 Company's credit rating.<sup>61</sup> I believe the Company's requested common equity ratio is  
3 reasonable as a partial offset to its heightened business risk and a necessary financial  
4 metric to regain a single A or above bond rating, which I consider optimal and cost  
5 efficient.

6 **F. Conclusion**

7 **Q. WHAT DO YOU CONCLUDE FROM DR. GRIFFING'S TESTIMONY?**

8 A. I agree with several of Dr. Griffing's views and procedures: (i) his use of analysts'  
9 growth forecasts as proxies for expected growth in the classic DCF model; (ii) his beta  
10 estimates in the CAPM analysis; (iii) his flotation cost adjustment; (iv) his market risk  
11 premium estimates; and (v) his rejection of the results produced by the multi-stage DCF  
12 model.

13 But I disagree with the arbitrary manner in which he arrived at his final  
14 recommendation. From the eight ROE estimates developed by Dr. Griffing, he arbitrarily  
15 selects only two to his liking: the 9.11% DCF result and the 10.22% CAPM result, and  
16 ignores the other six results. He then arbitrarily assigns an 80% weight to the DCF  
17 9.11% result and a 20% weight to the CAPM 10.22% result to arrive at his recommended  
18 ROE of 9.15%. Nowhere does Dr. Griffing justify, provide support, or derive these  
19 weights. I find this approach arbitrary and results-oriented.

20 Dr. Griffing has also understated his CAPM results because of the wrong choice  
21 of risk-free rate proxy. Correcting this understatement increases his recommendation  
22 from 9.15% to 9.61%.

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<sup>61</sup> Moody's July 29 Report at 2; Moody's July 12 Report at 2.

1 **Q. HAS DR. GRIFFING PRESENTED ANY ARGUMENTS IN HIS TESTIMONY**  
2 **THAT WOULD CAUSE YOU TO ALTER ANY OF YOUR**  
3 **RECOMMENDATIONS AND METHODOLOGIES?**

4 A. No, he has not.

5 **IV. REBUTTAL TO MR. O'DONNELL'S TESTIMONY**

6 **Q. PLEASE SUMMARIZE MR. O'DONNELL'S RETURN ON EQUITY**  
7 **RECOMMENDATION.**

8 A. Mr. O'Donnell recommends a return on equity for SDG&E of 9.5%. In determining the  
9 cost of equity, Mr. O'Donnell applies a DCF analysis to a group of electric utilities and to  
10 SDG&E's parent company Sempra Energy. Mr. O'Donnell's DCF analyses produce  
11 results of 7.1% - 9.2% for the peer group, and 8.3% - 10.5% for Sempra Energy.<sup>62</sup>

12 Mr. O'Donnell also performs a CAPM analysis, but he does not rely on the results  
13 of this analysis. And Mr. O'Donnell performs a Comparable Earnings analysis on the  
14 same peer group that produces results of 9.25% - 10.25%. Based on these results, Mr.  
15 O'Donnell concludes that SDG&E's cost of common equity is 9.5%.

16 **Q. WHAT IS YOUR GENERAL REACTION TO MR. O'DONNELL'S RETURN ON**  
17 **EQUITY RECOMMENDATION?**

18 A. Before I engage in a more technical critique of Mr. O'Donnell's testimony, I offer my  
19 general reaction to Mr. O'Donnell's testimony.

20 First, I agree with several of Mr. O'Donnell's procedures. I agree with his choice  
21 of peer companies, his spot dividend yield component in the DCF analysis, his beta  
22 estimates in the CAPM analysis, and his Comparable Earnings estimates.

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<sup>62</sup> FEA Testimony (O'Donnell) at 61 (Table 23).

1           That said, my second takeaway is that there are some flaws in his choice of input  
2 data in both the DCF and CAPM analyses. Third, and this is my primary concern, Mr.  
3 O'Donnell's choice of DCF growth rates in the DCF, the crux of his recommendation, is  
4 arbitrary and inconsistent with the empirical evidence on the subject.

5 **Q. WHAT ARE THE BASIC CONCLUSIONS OF YOUR REBUTTAL TO MR.**  
6 **O'DONNELL'S RETURN ON EQUITY TESTIMONY?**

7 A. My main conclusion is that Mr. O'Donnell's ROE recommendation of 9.50% rests on  
8 flawed DCF growth rates.

9 **Q. PLEASE SUMMARIZE YOUR SPECIFIC CRITICISMS OF MR. O'DONNELL'S**  
10 **RETURN ON EQUITY TESTIMONY.**

11 A. On technical and methodological grounds, I have ten specific criticisms regarding Mr.  
12 O'Donnell's return on equity testimony, as further discussed below:

13 **1. Understated Dividend Yield.** Mr. O'Donnell's dividend yield component in the  
14 DCF analysis is understated because it is not consistent with the annual form of the DCF  
15 model. It is inappropriate to rely on the spot dividend yield when implementing the DCF  
16 model. Mr. O'Donnell should have relied on the expected dividend yield instead of the  
17 spot dividend yield, as is required by the DCF model. As a result, I estimate that his DCF  
18 estimates are understated by 20 basis points.

19 **2. DCF Dividend Yield and Flotation Costs.** Mr. O'Donnell's dividend yield  
20 component is understated because it does not allow for flotation costs and, as a result, a  
21 legitimate expense is left unrecovered and his ROE results are understated by 20 basis  
22 points.

1           **3. DCF Historical Growth Rates.** In order to estimate the growth component of the  
2 DCF model, Mr. O'Donnell relies on a variety of historical growth rates, despite  
3 substantial changes occurring in the electric utility industry that have made use of  
4 historical growth rates questionable. Moreover, historical growth rates are redundant  
5 since historical growth patterns are already reflected in analysts' growth forecasts, which  
6 he does not use despite the forward-looking nature of all financial models, including the  
7 DCF. Also, the stock price Mr. O'Donnell uses in his DCF analysis is predicated on  
8 analysts' growth forecasts and not on historical growth rates.

9           The best proxy for the growth component of the DCF model is analysts' long-  
10 term earnings growth forecasts. It is not clear as to why Mr. O'Donnell chose not to  
11 simply rely on Value Line's growth projections and on analysts' growth projections  
12 generally – given the forward-looking nature of financial models and their demonstrated  
13 superiority in the finance literature. As I show below, investors expect substantially  
14 higher long-term growth rates for electric utilities than what Mr. O'Donnell employs in  
15 his DCF analysis.

16           **4. Sustainable Growth Technique.** The sustainable growth methodology (a.k.a.  
17 Plowback Method) for estimating the growth component in the DCF formula is logically  
18 inconsistent because the user is forced to assume the answer to implement the method.

19           **5. Appropriate DCF Growth Rates.** Mr. O'Donnell should have relied on analyst  
20 growth forecasts in keeping with the supportive literature on the subject.

21           **6. CAPM Risk-Free Rate.** Mr. O'Donnell's estimate of the CAPM risk-free rate is too  
22 low because it is based on current interest rates rather than on projected rates.

1           **7. CAPM Market Risk Premium.** Mr. O'Donnell's estimate of the market risk  
2 premium for his CAPM analyses is too low because: (i) he has erroneously included the  
3 results of studies which employ geometric means instead of the correct arithmetic means;  
4 (ii) he arbitrary selects the MRP literature on which he relies and ignores the vast  
5 literature on the subject; (iii) he has mistakenly employed market returns instead of  
6 market risk premiums; and (iv) the survey method of specifying the MRP chosen by Mr.  
7 O'Donnell is inappropriate.

8           **8. CAPM and the Empirical CAPM.** The plain vanilla version of the CAPM used by  
9 Mr. O'Donnell understates returns of equity for low-beta securities, such as SDG&E.

10           **9. SDG&E Risk Premium.** Mr. O'Donnell fails to allow for the fact that SDG&E is  
11 among the riskiest, if not the riskiest, electric utility at this time, as shown in his own  
12 DCF results and beta estimates – and despite the fact that he repeatedly acknowledges  
13 that SDG&E faces higher than average risks.

14           **10. Unfounded criticisms.** Mr. O'Donnell's criticisms of my direct testimony are  
15 unfounded.

16           I shall now discuss each criticism in turn.

17           **A. Spot Dividend Yield vs Expected Dividend Yield**

18           **Q. WHY IS MR. O'DONNELL'S ADJUSTMENT TO THE DIVIDEND YIELD**  
19           **COMPONENT IN HIS DCF ANALYSES INAPPROPRIATE?**

20           **A.** Yes. I disagree with Mr. O'Donnell's dividend yield calculation in his DCF analysis<sup>63</sup>  
21 because he relied on the spot dividend yield rather than on the expected dividend yield

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<sup>63</sup> *Id.* at 58:18-27.

1 that is specifically required by the DCF model. This procedure understates the return  
2 expected by the investor by 20 basis points as I show below.

3 The fundamental assumption of the basic annual DCF model is that dividends are  
4 received annually at the end of each year and that the first dividend is to be received one  
5 year from now.<sup>64</sup> Thus, the appropriate dividend to use in a DCF model is the full  
6 prospective dividend to be received at the end of the year. The expected dividend yield is  
7 simply calculated by multiplying the spot dividend yield by the expected growth rate (1 +  
8 g). Instead, Mr. O'Donnell relied on the current spot dividend rather than the expected  
9 dividend. Since the appropriate dividend to use in a DCF model is the prospective  
10 dividend one year from now, Mr. O'Donnell's approach understates the proper dividend  
11 yield. This creates a significant downward bias in his dividend yield component, and  
12 underestimates the cost of equity by approximately 20 basis points. For example, for a  
13 spot dividend yield of 3.0% and a growth rate of 6.0%, the correct dividend yield to  
14 employ is 3.0% (1 + .06) = 3.2%, which is 20 basis points higher than 3.0%.

15 Moreover, the basic annual DCF model ignores the time value of quarterly  
16 dividend payments and assumes dividends are paid once a year at the end of the year.  
17 Multiplying the spot dividend yield by (1 + g) is actually a conservative attempt to

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<sup>64</sup> The DCF model states very clearly that the investor return is given by the following classic expression:  $K_e = D_1/P_0 + g$

where:  $K_e$  = investors' expected return on equity  
 $D_1$  = expected dividend at the end of the coming year  
 $P_0$  = current stock price  
 $g$  = expected growth

Note the prospective dividend term  $D_1$  in the standard DCF equation.

1 capture the reality of quarterly dividend payments and understates the expected return on  
2 equity.

3 **B. Dividend Yield and Flotation Costs**

4 **Q. IN YOUR DIRECT TESTIMONY, YOU STATED THAT THE RETURN ON**  
5 **EQUITY SHOULD BE ADJUSTED TO INCLUDE AN ALLOWANCE FOR**  
6 **FLOTATION COSTS. PLEASE COMMENT ON FLOTATION COSTS.**

7 A. As I discussed earlier in my rebuttal, the expected dividend yield component of the DCF  
8 model must be adjusted for flotation cost by dividing it by  $(1 - f)$ , where  $f$  is the flotation  
9 cost factor. Mr. O'Donnell's common equity return recommendation does not include  
10 any allowance for issuance expense, and therefore understates his DCF estimates of  
11 equity costs by 20 basis points.

12 **C. Historical DCF Growth Rates**

13 **Q. WHAT DCF GROWTH RATES DID MR. O'DONNELL EMPLOY?**

14 A. Mr. O'Donnell employs a smorgasbord of thirteen growth rates as proxies for the DCF  
15 growth component. Table 4 below provides the thirteen growth rates for his proxy group  
16 of electric utilities.

17 **Table 4. Mr. O'Donnell's DCF Growth Rates**  
18 **for His Proxy Group of Electric Utilities**

1	10-yr historical Earnings	4.6%
2	10-yr historical Dividend	5.9%
3	10-yr historical Book Value	4.7%
4	5-yr historical Earnings	4.6%
5	5-yr historical Dividend	5.0%
6	5-yr historical Book Value	5.2%
7	Value Line Projected earnings	6.1%
8	Value Line Projected dividend	5.3%
9	Value Line projected Book Value	5.1%
10	Value Line Sustainable Growth	3.9%





1           Moreover, it is necessary to use earnings forecasts rather than dividend forecasts  
2 because of the extreme scarcity of dividend forecasts compared to the wide availability of  
3 earnings forecasts. Given the paucity of dividend forecasts, use of dividend forecasts  
4 produces unreliable DCF results.

5 **Q.   WHAT DO YOU CONCLUDE FROM MR. O'DONNELL'S USE OF**  
6 **HISTORICAL GROWTH RATES?**

7 A.   Historical growth rates should be rejected as proxies for expected growth in the DCF  
8 calculation.

9 **D.   Sustainable Growth Rates**

10 **Q.   PLEASE COMMENT ON MR. O'DONNELL'S SUSTAINABLE GROWTH**  
11 **ESTIMATE IN THE DCF MODEL.**

12 A.   In order to estimate the growth component of the DCF model, Mr. O'Donnell relies  
13 partially on the so-called "sustainable growth" method, which he refers to as the  
14 "plowback growth" method, where the growth rate is based on the following equation:

$$g = b \times r$$

16           Where: b = the % of earnings retained

17           r = the expected rate of return on book equity

18           As I discussed earlier in my rebuttal of Messrs. Rothschild and Griffing, Mr.  
19 O'Donnell's use of the sustainable growth technique is erroneous for several reasons, the  
20 most important of which is that it is logically circular because it requires an estimate of  
21 the expected rate of return on equity to estimate the cost of equity using the DCF model.  
22 The Commission should reject sustainable growth rates as proxies for expected growth in  
23 the DCF calculation.

1           **E.     Appropriate DCF Growth Rates**

2           **Q.     WHAT GROWTH RATES SHOULD HAVE MR. O'DONNELL RELIED UPON**  
3           **IN HIS DCF ANALYSIS?**

4           A.     Given the redundancy of historical growth rates, the inherent circularity of the sustainable  
5           growth method, and the scarcity of dividend growth forecasts, we are left with three  
6           earnings growth forecasts from Table 4 above: 6.1%, 5.6%, and 5.5%. The forecasts  
7           range from 5.5% to 6.1%, which is the final growth rate range Mr. O'Donnell should  
8           have selected for instead of his final range of 4.0% - 6.0% shown on page 60, line 18.

9           **Q.     WHAT ABOUT MR. O'DONNELL'S GROWTH RATES FOR SEMPRA**  
10           **ENERGY?**

11          A.     Table 5 below replicates the menu of growth rates for Sempra Energy from his Exhibit  
12          KWO-9. The forecasts range from 8.0% to 11.0%, which is the final range Mr.  
13          O'Donnell should have selected for Sempra Energy instead of his final range of 5.5% to  
14          7.5% shown on page 60, line 25.

15                   **Table 5. Mr. O'Donnell's DCF Growth Rate for Sempra Energy**

1	10-yr historical Earnings	1.0%
2	10-yr historical Dividend	10.0%
3	10-yr historical Book Value	5.5%
4	5-yr historical Earnings	2.0%
5	5-yr historical Dividend	7.5%
6	5-yr historical Book Value	4.0%
7	Value Line Projected earnings	11.0%
8	Value Line Projected dividend	8.0%
9	Value Line projected Book Value	6.5%
10	Value Line Sustainable Growth	4.0%
12	CFRA EPS forecast	11.0%
13	Schwab EPS forecast	8.2%

16                   **Source:** O'Donnell Exhibit KWO-9.

1 **Q. DR. MORIN, PLEASE PROVIDE A SUMMARY OF THE RECOMMENDED**  
2 **CHANGES TO MR. O'DONNELL'S DCF ANALYSIS.**

3 A. The dividend yield range of 3.1% to 3.2% for the peer group should be adjusted upward  
4 by 40 basis points in order to capture both the expected dividend yield rather than the  
5 spot yield (20 basis points) and the flotation cost adjustment (20 basis points), and  
6 becomes 3.5% - 3.6%. As stated above, the peer group's initial growth rate range of  
7 4.0% - 6.0% becomes 5.5% - 6.1%. Adding the revised dividend yield range to the  
8 amended growth range, the correct DCF estimate for the peer group is 9.0% - 9.7%.

9 In short, correction of these understatements would increase Mr. O'Donnell's  
10 final DCF range for the peer group from 7.1% - 9.2% to 9.0% - 9.7%.

11 The same amendments apply to Mr. O'Donnell's DCF estimates for Sempra  
12 Energy. The dividend yield range of 2.8% to 3.0% should be adjusted upward by 40  
13 basis points in order to capture both the expected dividend yield rather than the spot yield  
14 (20 basis points) and the flotation cost adjustment (20 basis points), and becomes 3.2% -  
15 3.4%. Sempra Energy's growth rate range of 5.5% - 7.5% becomes 8.0% - 11.0%.  
16 Adding the revised dividend yield range to the amended growth range, the correct DCF  
17 estimate for the peer group is 11.2% - 14.4%.

18 In short, correction of these understatements would increase Mr. O'Donnell's  
19 final DCF range for Sempra Energy from 8.3% to 10.5% to 11.2% - 14.4%. It is not  
20 surprising that the DCF estimates for Sempra Energy exceed those of the peer group,  
21 attesting to the much higher risks of its SDG&E subsidiary.

1           **F.      CAPM Risk-Free Rate**

2           **Q.      DOES MR. O'DONNELL PERFORM A CAPM ANALYSIS?**

3           A.      Yes. Mr. O'Donnell's CAPM analysis is displayed on Exhibit WKO-12. Mr. O'Donnell  
4           uses a risk-free rate range of 2.53% - 3.46%, a beta of 0.58 for the peer group and 0.75  
5           for Sempra Energy, and a MRP range of only 4.0 % - 6.0%.

6                     Mr. O'Donnell does not appear to rely on the CAPM to arrive at his return on  
7           recommendation, presumably because his CAPM analyses suggest results that are  
8           unreasonably low. As I show below, the reason for the unreasonably low results is that  
9           Mr. O'Donnell has relied on the wrong input data to implement the CAPM.

10          **Q.      IS MR. O'DONNELL'S RISK-FREE RATE ESTIMATE OF 2.53% - 3.46%**  
11          **REASONABLE FOR THE CAPM ANALYSIS?**

12          A.      No. Mr. O'Donnell's risk-free rate assumption of 2.53% - 3.46% (midpoint 3.00%) is too  
13          low for purposes of applying the CAPM. As discussed earlier, professional, institutional,  
14          and governmental interest rate forecasts are much higher, with an average of 4.2%. Mr.  
15          O'Donnell significantly understates his CAPM estimates by using a risk-free rate that is  
16          120 basis points (4.2% - 3.0% = 1.2%) lower than projected.

17          **Q.      DO YOU AGREE WITH MR. O'DONNELL'S STATEMENT THAT THE LEVEL**  
18          **OF INTEREST RATES IS NOT EXPECTED TO CHANGE.**

19          A.      No, I do not. I refer to my Table 1 earlier in my rebuttal where I compile interest rate  
20          forecasts from a variety of professional sources. These forecasts averaging 4.2% clearly  
21          point to an expected rise in interest rates.

1 **Q. DR. MORIN, DO YOU AGREE WITH MR. O'DONNELL'S BETA ESTIMATE**  
2 **IN THE CAPM ANALYSIS?**

3 A. Yes, I do. It is noteworthy that Sempra Energy's beta of 0.75 is much higher than the  
4 0.58 beta for the peer group, attesting to the much higher risk of Sempra Energy's  
5 subsidiary SDG&E.

6 **G. CAPM Market Risk Premium (MRP)**

7 **Q. HOW DOES MR. O'DONNELL ESTIMATE THE MRP COMPONENT OF THE**  
8 **CAPM?**

9 A. In order to determine the MRP component of the CAPM, Mr. O'Donnell relies on both  
10 historical returns and on expected returns from professional investors. Mr. O'Donnell  
11 uses 4.0% - 6.0% range as his final estimate of the MRP for his CAPM analyses.

12 **Q. WHAT IS WRONG WITH MR. O'DONNELL'S HISTORICAL MRP**  
13 **ESTIMATES?**

14 A. There are significant errors with Mr. O'Donnell's historical MRP estimates. Let's start  
15 with the historical MRP estimates from Mr. O'Donnell's testimony, taken from the 2017  
16 Ibbotson Valuation Yearbook (now Morningstar Valuation Yearbook).<sup>65</sup> There are three  
17 deficiencies with this approach. First, the estimates are stale. Mr. O'Donnell should  
18 have relied on the current 2019 edition of this reference and not on the old 2017 edition.  
19 Second, and most importantly, only arithmetic mean returns are relevant, and geometric  
20 mean returns should be ignored, as I discussed previously in my rebuttal. Third, only the  
21 income component of bond returns should be used when computing the historical MRP,

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<sup>65</sup> FEA Testimony (O'Donnell) at 37 (Table 10).

1 as I showed in my direct testimony.<sup>66</sup> Using the current edition of the Morningstar  
2 Valuation Yearbook, ignoring geometric mean returns, and using the income component  
3 of bond returns, the correct MRP is 6.9% as I discussed at length in my direct testimony.

4 **Q. WHAT IS WRONG WITH MR. O'DONNELL'S EXPECTED MRP ESTIMATES?**

5 A. They are misspecified. Mr. O'Donnell cherry picks an article entitled "Experts Forecast  
6 Long-Term Stock and Bond Returns: 2019 Edition," published by Morningstar.<sup>67</sup> The  
7 article lists market experts' forecasts of total market returns. These returns vary widely  
8 ranging from -4.1% to 9.0%, presumably because they are all based on different time  
9 periods and/or different definitions of returns. But the fundamental problem with Mr.  
10 O'Donnell's reliance on these forecasts is that they are not forecasts of market risk  
11 premiums, they are forecasts of market returns! Mr. O'Donnell has confused market  
12 returns with MRPs.

13 **Q. DR. MORIN, PLEASE COMMENT ON MR. O'DONNELL'S RELIANCE ON A**  
14 **SURVEY TECHNIQUE TO ESTIMATE THE MRP IN THE CAPM ANALYSIS.**

15 A. Yes. First, as a general comment, surveys of academics and investment professionals, for  
16 example the Graham and Harvey survey on which Mr. O'Donnell relies,<sup>68</sup> provide  
17 another technique of estimating the MRP. While this technique has the benefit of being  
18 forward-looking, it is subject to the well-known shortcomings of survey techniques.  
19 There are several reasons to place little weight on survey results relative to the results  
20 from other approaches. First, return definitions and risk premium definitions differ

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<sup>66</sup> Ex. SDG&E-04 (Morin) at 35:3-8.

<sup>67</sup> FEA Testimony (O'Donnell) at 37:5-6.

<sup>68</sup> *Id.* at 38, n. 19.

1 widely. Second, survey responses are subject to bias. Thirdly, subjective assessments  
2 about long-term market behavior may well place undue weight on recent events and  
3 immediate prospects.

4 **Q. CAN YOU COMMENT ON THE GRAHAM AND HARVEY SURVEY USED BY**  
5 **MR. O'DONNELL TO ESTIMATE THE MRP?**

6 A. Yes. Keeping in mind the limitations just cited above, Mr. O'Donnell relied on the 4.4%  
7 MRP produced in the Graham and Harvey survey. However, what Mr. O'Donnell fails to  
8 point out from the survey is that in making real-world investment decisions companies  
9 use actual weighted average cost of capital (WACC) rates in the range of 9.3% - 9.7%  
10 and investment. The cost of equity rates implied by the WACC rates of 9.3% - 9.7% are  
11 in the range of 13% - 15%. Therefore, one can only conclude that the MRP is much  
12 higher than Mr. O'Donnell's 4.0% - 6.0% estimate, and the cost of equity is much higher  
13 than Mr. O'Donnell's SDG&E cost of equity recommendation of 9.5%.

14 **Q. WHAT IS THE PREVALENT ACADEMIC CONSENSUS ON THE MAGNITUDE**  
15 **OF THE MARKET RISK PREMIUM?**

16 A. In their widely-used authoritative textbook, following a comprehensive review of the rich  
17 and fertile MRP literature, Richard Brealey, Stewart Myers, and Franklin Allen state as  
18 follows:<sup>69</sup>

19 *“Brealey, Myers, and Allen have no official position on the issue, but we believe*  
20 *that a range of 5 to 8 % is reasonable for the risk premium in the United States.”*

21 My own survey of the MRP literature is also quite consistent with this range.<sup>70</sup>

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<sup>69</sup> Richard A. Brealey, *et al.*, *Principles of Corporate Finance*, at 180 (9th ed. 2008).

<sup>70</sup> See Roger A. Morin, *The New Regulatory Finance*, at chapter 5 (2006).



1       **Q.     ARE THERE STUDIES OF MARKET RISK PREMIUMS IGNORED BY MR.**  
2       **O'DONNELL THAT IMPLY CONSIDERABLY LARGER ESTIMATES OF THE**  
3       **MRP?**

4       A.     Yes, there are. Instead of relying on just one article from the professional press that is  
5       unpublished in refereed academic journals, Mr. O'Donnell should have examined the  
6       prevailing abundant academic literature on the subject. Several studies suggest MRPs  
7       that are much higher than Mr. O'Donnell's recommended MRP of 4.0% - 6.0%.

8             Here are a few noteworthy examples. A 2006 study by Elroy Dimson, Paul  
9       Marsh, and Mike Staunton<sup>71</sup> reports returns over the period 1900 to 2005 for twelve  
10      countries, representing 90 % of today's world market capitalization. They report: (i) an  
11      average risk premium over long-term bond returns of 6.5 % for the U.S.; and (ii) that the  
12      MRP was generally higher for the second half of the 20th Century than for the first half  
13      of the 20th Century. For example, the MRP for the U.S. was 5.0 % in the first half of the  
14      20th Century, compared to 7.5% in the second half of the 20th Century. Richard Brealey,  
15      Stewart Myers, and Franklin Allen updated the Dimson study and found an average  
16      market risk premium of 6.5 % for the U.S.<sup>72</sup>

17             Another study of MRPs was published by Rajnish Mehra, which concludes that  
18      the MRP over the 1889-2000 period is likely to be similar to its historical estimate of  
19      between 6.0% and 8.0%.<sup>73</sup>

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<sup>71</sup> Elroy Dimson, *et al.*, "Risk and Return in the 20th and 21st centuries," Business Strategy Review 11(2): 1-18 (2000).

<sup>72</sup> Richard A. Brealey, *et al.*, *Principles of Corporate Finance* (9th ed. 2006).

<sup>73</sup> Rajnish Mehra, "The Equity Risk Premium: Why Is It a Puzzle?" 59 Financial Analysts' Journal 54-69 (2003).

1 Another study measured the MRP by subtracting the risk-free rate from the  
2 expected future long-term returns on the overall equity market. This study by Robert  
3 Harris and Felicia Marston<sup>74</sup> resulted in a MRP of 6.5%. Another study by George  
4 Constantinides<sup>75</sup> presented in his presidential address to the American Finance  
5 Association in 2001 found MRP estimates of 8.0% over the 1926-2000 period and 6.0%  
6 over the 1951-2000 period. A study by Steven Kaplan and Richard Ruback<sup>76</sup> based on  
7 investment studies of companies involved in management buyouts and leveraged  
8 recapitalization found a median MRP estimate of 7.8% based on a careful analysis of  
9 actual major investment decisions rather than on realized market returns. Finally, a study  
10 of MRPs was published by Mehra,<sup>77</sup> who concludes that the MRP over the 1889-2000  
11 period is likely to be similar to its historical estimate of 6% - 7%.

12 **Q. WHAT CAN THE COMMISSION CONCLUDE FROM MR. O'DONNELL'S**  
13 **MARKET RISK PREMIUM ESTIMATE OF 4.0% - 6.0%?**

14 A. The Commission should conclude that Mr. O'Donnell's MRP estimate of 4.0% - 6.0% is  
15 understated and is inconsistent with the vast literature on the subject. All in all, I echo  
16 Professors Brealey, Myers, and Allen's official position and my own position on the  
17 MRP that a range of 6% to 8% is reasonable for the MRP in a CAPM analysis.

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<sup>74</sup> Robert S. Harris & Felicia C. Marston, "Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts," 21 *Financial Management* 63-70 (1992).

<sup>75</sup> George M. Constantinides, "Rational Asset Prices," 57 *Journal of Finance* 1567-91 (2002).

<sup>76</sup> Steven N. Kaplan & Richard S. Ruback, "The Valuation of Cash Flow Forecasts: An Empirical Analysis," 50 *Journal of Finance* 1059-93 (1995).

<sup>77</sup> Mehra, R., "The Equity Risk Premium: Why Is It a Puzzle?" *Financial Analysts' Journal*, Jan- Feb. 2003.

1 **Q. DR. MORIN, PLEASE PROVIDE A SUMMARY OF THE RECOMMENDED**  
2 **CHANGES TO MR. O'DONNELL'S CAPM ESTIMATES.**

3 A. Mr. O'Donnell should have used a risk-free rate of 4.2%, and a MRP in the 6.0% - 8.0%  
4 range in the CAPM. Using his beta of 0.58 for the peer group, the CAPM estimate  
5 becomes 7.9% - 9.0% inclusive of flotation cost. Using Sempra Energy's beta of 0.75,  
6 the CAPM estimate becomes 8.9% - 10.4% inclusive of flotation cost.

7 **H. Empirical CAPM**

8 **Q. DO YOU AGREE WITH MR. O'DONNELL'S EXCLUSIVE USE OF THE PLAIN**  
9 **VANILLA VERSION OF THE CAPM?**

10 A. No. As I discussed earlier, the plain version of the CAPM should be supplemented by the  
11 more refined version of the CAPM in estimating returns on equity, that is, the Empirical  
12 CAPM. The downward-bias inherent in the CAPM is particularly significant for low-  
13 beta securities, such as the peer group of electric utilities used by Mr. O'Donnell. Mr.  
14 O'Donnell's CAPM estimates of equity costs are understated by about 50 basis points  
15 (*i.e.*, 0.50%) from this bias alone. Adding 50 basis points to his revised CAPM estimates  
16 documented above, the cost of equity 8.4% - 9.5% for the peer group and 9.4% - 10.9%  
17 for Sempra Energy.

18 **I. SDG&E Risk Premium**

19 **Q. DID MR. O'DONNELL ADJUST HIS RECOMMENDED RETURN ON EQUITY**  
20 **UPWARD IN ORDER TO ACCOUNT FOR THE COMPANY'S HIGHER**  
21 **RELATIVE RISK?**

22 A. No, he did not, despite his statement that:

1 “I understand and accept the fact that SDG&E has a higher level of risk  
2 due to inverse condemnation and the ongoing threat of wildfires.”<sup>78</sup>

3 Given the multiple downgrades of the California electric utilities’ bonds over the past  
4 years and the rationales for the downgrades – and given the higher than average DCF  
5 estimates and beta estimates of Sempra Energy relative to its peers produced by Mr.  
6 O’Donnell himself – it is transparent that wildfire risks and ancillary issues have  
7 impacted the cost of equity. See for example the 1.2% - 1.3% difference in DCF  
8 estimates between those of the peer group and Sempra Energy.<sup>79</sup> Mr. O’Donnell does not  
9 explain why he did not apply a risk premium adjustment to his results in order to account  
10 for SDG&E’s higher relative risks.

11 I refer to my direct testimony, and the direct and supplemental testimony of  
12 SDG&E’s other supporting witnesses, for a detailed discussion of the Company’s higher  
13 relative risks, including wildfire-related liability risks and why return estimates are higher  
14 for SDG&E, including those of Mr. O’Donnell.

15 **Q. DR. MORIN, DO YOU AGREE WITH THE RESULTS OF MR. O’DONNELL’S**  
16 **COMPARABLE EARNINGS ANALYSIS?**

17 A. Yes, I do.

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<sup>78</sup> FEA Testimony (O’Donnell) at 57:15-16; *accord id.* at 41:14-16 (inverse condemnation “does make an investment in a [California utility] more risky, as a whole, than an investment in an utility that operates in a state without such liability risk”).

<sup>79</sup> *Id.* at 61 (Table 23).

1           **J.       Responses to Mr. O'Donnell's Criticisms.**

2                   **1.       Dividend Yield Calculation**

3           **Q.       DO YOU AGREE WITH MR. O'DONNELL'S ASSESSMENT OF YOUR**  
4           **METHOD OF CALCULATING THE DIVIDEND YIELD?**

5           A.       No, I do not. Mr. O'Donnell misrepresents my position on the correct way to calculate  
6           the dividend yield in the DCF model.<sup>80</sup> I simply relied on the standard textbook version  
7           of the annual DCF model, which clearly calls for multiplying the spot dividend yield by  
8            $(1 + g)$ . That is in fact a conservative approach because recognition of the quarterly  
9           nature of dividend payments would produce a higher DCF estimate. As I said earlier  
10          when rebutting the testimony of Mr. Rothschild, the fundamental assumption of the  
11          annual DCF model used by Mr. O'Donnell is that dividends are received annually at the  
12          end of each year and that the first dividend is to be received one year from now. Thus,  
13          the appropriate dividend to use in a DCF model is the full prospective dividend to be  
14          received at the end of the year.

15                   **2.       Analyst Growth Forecasts**

16          **Q.       PLEASE COMMENT ON MR. O'DONNELL'S CRITICISM OF YOUR DCF**  
17          **ANALYSIS.**

18          A.       Mr. O'Donnell criticizes the use of the analysts' earnings growth forecasts as a proxy for  
19          the growth component in the DCF model because they are not accurate indicators of  
20          investor expectations.<sup>81</sup>

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<sup>80</sup> *Id.* at 66:1-23.

<sup>81</sup> *Id.* at 67:6-13.

1           As I demonstrated earlier in my rebuttal, published studies in the academic  
2 literature demonstrate that: (i) analysts' growth rate forecasts are reasonable indicators of  
3 investor expectations; and (ii) investors rely on such forecasts. For example, using  
4 virtually all publicly available analyst earnings forecasts for a large sample of companies  
5 (over 23,000 individual forecasts by 100 analyst firms), Thomas Lys and Sungkyu Sohn  
6 show that stock returns respond to individual analyst earnings forecasts, even when they  
7 are closely preceded by earnings forecasts made by other analysts or by corporate  
8 accounting disclosures.<sup>82</sup> Empirically, the severity of the problem is unclear for regulated  
9 utilities, if a problem exists at all. I note that the studies cited by Mr. O'Donnell on the  
10 accuracy of analyst forecasts are not focused specifically on the utility industry.

11           One way to assess the concern that analysts' forecasts may be biased is to  
12 incorporate into the analysis the growth forecasts of independent research firms, such as  
13 Value Line, in addition to the analyst consensus forecast. Unlike investment banking  
14 firms and stock brokerage firms, independent research firms, such as Value Line, have no  
15 incentive to distort earnings growth estimates in order to bolster interest in common  
16 stocks. It is interesting to note that Value Line forecasts for utility companies made by  
17 independent analysts with no incentive for over or understating growth forecasts are not  
18 materially different from those published by analysts in security firms.

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<sup>82</sup> Thomas Lys & Sungkyu Sohn, "The Association between Revisions of Financial Analysts' Earnings Forecasts and Security-Price Changes," 13 *Journal of Accounting and Economics* 341-63 (1990).

1 **Q. IS THERE ANY EMPIRICAL EVIDENCE DOCUMENTING THE**  
2 **IMPORTANCE OF EARNINGS IN EVALUATING INVESTORS’**  
3 **EXPECTATIONS IN THE INVESTMENT COMMUNITY?**

4 A. Yes, there is an abundance of evidence attesting to the importance of earnings forecasts  
5 in assessing investors’ expectations. First, the sheer volume of earnings forecasts  
6 available from the investment community relative to the scarcity of dividend forecasts  
7 attests to their importance. To illustrate, Value Line, Zacks Investment, First Call  
8 Thompson, Reuters, Yahoo Finance, and Multex provide comprehensive compilations of  
9 investors’ earnings forecasts, to name some. The fact that these investment information  
10 providers focus on growth in earnings rather than growth in dividends indicates that the  
11 investment community regards earnings growth as a superior indicator of future long-  
12 term growth. Second, Value Line’s principal investment rating assigned to individual  
13 stocks, Timeliness Rank, is based primarily on earnings, accounting for 65 % of the  
14 ranking.

15 **Q. WHAT CAN THE COMMISSION CONCLUDE FROM MR. O’DONNELL’S**  
16 **CONCERN WITH THE ACCURACY OF ANALYSTS’ GROWTH FORECASTS?**

17 A. The important factor is not whether analysts’ forecasts are accurate but whether or not  
18 they are incorporated in stock prices and investor expectations. Mr. O’Donnell’s concern  
19 is inconsistent with the empirical finance literature on the subject. I also note that Mr.  
20 O’Donnell employs analysts’ earnings growth forecasts from Value Line, Schwab and  
21 CFRA for three of his thirteen growth proxies for the DCF growth rate and actually ends  
22 up selecting growth rates for his proxy group that are close to analyst growth forecasts in  
23 his final choice of DCF growth rates.

1                   **3. Interest Rate Forecasts**

2   **Q. DR. MORIN, DO YOU AGREE WITH MR. O'DONNELL THAT THE**  
3   **ACCURACY OF INTEREST RATE FORECASTS IS PROBLEMATIC?**

4   A. No, I do not. Mr. O'Donnell suggests that little weight should be accorded to interest rate  
5   forecasts because they are often wrong, implying that they should not be used as proxies  
6   for the risk-free rate in implementing financial models.<sup>83</sup>

7                   I disagree with Mr. O'Donnell's point of view on economic forecasts. As I  
8   indicated earlier in my rebuttal, investors' required returns can and do shift over time  
9   with changes in capital market conditions, hence the importance of considering interest  
10   rate forecasts. The fact that organizations such as Value Line, IHS (Global Insight), EIA,  
11   and Blue Chip among many others devote considerable expertise and resources to  
12   developing an informed view of the future, and the fact that investors are willing to  
13   purchase such expensive services, confirms the importance of economic/financial  
14   forecasts in the minds of investors. Moreover, the empirical evidence demonstrates that  
15   stock prices do indeed reflect prospective financial input data.

16                   **4. Market Risk Premium**

17   **Q. HOW DO YOU RESPOND TO MR. O'DONNELL'S CONCERN THAT YOUR**  
18   **MRP ESTIMATE IN THE CAPM AND THE EMPIRICAL CAPM IS LIMITED**  
19   **TO HISTORICAL ESTIMATES?**

20   A. Mr. O'Donnell deplores the fact that I have limited my estimate of the MRP to historical  
21   data, and that I should have also relied on expectational estimates of the MRP.<sup>84</sup> I agree

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<sup>83</sup> FEA Testimony (O'Donnell) at 70-73.

<sup>84</sup> *Id.* at 73-75.



1 with Mr. O'Donnell on that point. The difficulty is the lack of published forward-looking  
2 long-term estimates of the MRP. I have done such analyses myself in the past and found  
3 my 6.9% MRP estimate to be on the low side. In any event, Mr. O'Donnell's concern  
4 should be eased given that my 6.9% estimate falls within the range found in the vast  
5 literature on the subject which does include prospective studies as well as historical  
6 studies. I described that literature earlier in my rebuttal.

### 7 5. Historical Risk Premium

8 **Q. HOW DO YOU RESPOND TO MR. O'DONNELL'S CRITICISM THAT YOUR**  
9 **HISTORICAL RISK PREMIUM FOR THE UTILITY INDUSTRY IS SIMILAR**  
10 **TO THAT OF THE OVERALL MARKET?**

11 A. Mr. O'Donnell argues that my historical utility risk premium estimate of 6.1% is close to  
12 my 6.9% estimate of the MRP for the overall market,<sup>85</sup> which contradicts the fact that the  
13 electric utility beta of 0.60 suggests a lower utility risk premium. My response to this  
14 concern is that: 1) the MRP for the overall market of 6.9% understates the true MRP;  
15 and/or 2) the utility industry has become riskier over time approaching that of the overall  
16 market; and/or 3) the true current beta of utility stocks exceeds 0.60, which is an  
17 historical 5-year estimate from Value Line. I see no conflict from these two vastly  
18 different methodologies and perspectives, or from DCF estimates for that matter. There  
19 is nothing unusual about different financial models producing different cost of equity  
20 results; some models overstate, others understate the true cost of equity. That is why I

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<sup>85</sup> *Id.* at 76:1-9.

1 conclude in my textbook *New Regulatory Finance*<sup>86</sup> that one should review multiple  
2 financial models and apply informed judgment.

3 It is interesting to note that Mr. O'Donnell's various estimates also contain  
4 glaring inconsistencies. Using the same logic directed at my testimony, Mr. O'Donnell's  
5 9.5% return recommendation for SDG&E is quite contradictory and inconsistent with his  
6 MRP range of 4.0% - 6.0%. Adding his risk-free rate midpoint estimate of 3.0% to the  
7 MRP range of 4.0% - 6.0% suggests an overall market return of 7.0% - 9.0%, which is  
8 less than his recommended return for a presumably less risky electric utility. Mr.  
9 O'Donnell's recommended return of 9.5% for a regulated utility is higher than his  
10 estimate for the overall market, suggesting that SDG&E's beta is in excess of 1.0.

#### 11 **6. Allowed Risk Premium**

12 **Q. HOW DO YOU RESPOND TO MR. O'DONNELL'S CRITICISM THAT YOUR**  
13 **ALLOWED RISK PREMIUM STUDY IS INACCURATE?**

14 A. Mr. O'Donnell is concerned with the accuracy of the allowed risk premium because of a  
15 time lag between the decision and the filing date.<sup>87</sup> I disagree. Presumably, regulators  
16 issue rate orders that take into account current circumstances rather than those prevailing  
17 when cases are filed. Moreover, the likelihood of quantum changes in capital market  
18 circumstances is likely to be marginal during the lag period.

19 I have also addressed Mr. O'Donnell's concern with the use of forecast interest  
20 rates.

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<sup>86</sup> Morin, R. A., *The New Regulatory Finance*, Public Utilities Reports, Inc. (2006).

<sup>87</sup> FEA Testimony (O'Donnell) at 76:25-77:2.

1 **Q. DR. MORIN, PLEASE RESPOND TO MR. O'DONNELL'S CRITICISM OF A**  
2 **FLOTATION COST ALLOWANCE.**

3 A. Mr. O'Donnell argues that the Company should not be allowed to recover expenses  
4 associated with common stock issues and should amortize them over a 10-year period.<sup>88</sup>

5 I disagree with this position, for it is counter to the actual manner in which flotation costs  
6 are incurred. While they are not out-of-pocket expenses, the simple fact of the matter is  
7 that in issuing common stock, the Company's common equity account is credited by an  
8 amount less than the market value of the issue, so that the company must earn slightly  
9 more on its reduced rate base in order to produce a return equal to that required by  
10 shareholders. Therefore, the correct method of recovery is via a rate of return allowance.

11 As stated earlier in my rebuttal testimony, flotation costs for common stock are  
12 analogous to the flotation costs associated with past bond issues which, as a matter of  
13 routine regulatory policy, continue to be amortized over the life of the bond, even though  
14 no new bond issues are contemplated. In the case of common stock, which has no finite  
15 life, flotation costs are not amortized. Therefore, the recovery of flotation cost requires  
16 an upward adjustment to the allowed return on equity.

17 **Q. DR. MORIN, DO YOU ADVOCATE INCREASING RATES?**

18 A. No, I do not. Mr. O'Donnell makes the startling unfounded statement that I advocate  
19 raising rates.<sup>89</sup> I find that comment highly unprofessional and unjustified. Nowhere in  
20 my testimony do I advocate raising rates. My only concern is that rates should be set

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<sup>88</sup> *Id.* at 78:8-14.

<sup>89</sup> *Id.* at 81:12-14.

1 commensurate with a return that equals the cost of capital so as to avoid any transfers of  
2 wealth between investors and ratepayers.

3 **Q. HAS MR. O'DONNELL PRESENTED ANY ARGUMENTS IN HIS TESTIMONY**  
4 **THAT WOULD CAUSE YOU TO ALTER ANY OF YOUR**  
5 **RECOMMENDATIONS AND METHODOLOGIES?**

6 A. No, he has not.

7 **V. REBUTTAL TO MR. GORMAN'S TESTIMONY**

8 **Q. PLEASE SUMMARIZE MR. GORMAN'S RATE OF RETURN ON EQUITY**  
9 **RECOMMENDATION.**

10 A. Mr. Gorman recommends that a return allowance of 9.65% be applied to SDG&E's  
11 common equity capital for ratemaking purposes. In determining the cost of equity, Mr.  
12 Gorman applies three DCF analyses to a group of 15 electric utilities: a classic constant  
13 growth DCF analysis, a sustainable growth analysis, and a multi-stage DCF analysis.  
14 The results of the three DCF analyses for the proxy companies are summarized in his  
15 testimony.<sup>90</sup> Mr. Gorman concludes that his DCF results support a ROE of 8.6%.<sup>91</sup> He  
16 appears to give little weight, if any, to his multi-stage DCF results.

17 Mr. Gorman also applies a risk premium analysis based on the difference between  
18 the ROE awards of regulators of electric utilities and both U.S. Treasury bond yields and  
19 yields on A-rated utilities over the 1986- 2019 period bonds to arrive at two risk premia.  
20 Based on this analysis, as shown at the bottom of Column 3 in Exhibits MPG-10 and  
21 MPG-11, the average indicated equity risk premium is 5.57% over U.S. Treasury bond

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<sup>90</sup> *Id.* at VIII-25:10.

<sup>91</sup> *Id.* at VIII-35:10.

1 yields and 4.21% over Moody's utility bond yield. Mr. Gorman goes on to examine the  
2 range of risk premiums over the period using 5-year and 10-year averages to smooth out  
3 the results. The range in risk premium is 4.25% - 6.73% using a 5-year rolling average,  
4 and 4.38% - 6.58% using 10-year rolling averages. He then opts to arbitrarily give a 70%  
5 weight to the high-end result and 30% weight to the low-end result to finally arrive at a  
6 6.0% risk premium. Adding his risk-free rate estimate of 2.8%, the resulting cost of  
7 equity is 8.80% (2.80% + 6.00% = 8.80%). The same procedure is repeated, only this  
8 time using a utility-specific risk premium, namely, the yield on A-rated utility bonds.  
9 The resulting cost of equity estimate is 9.20%.

10 Mr. Gorman concludes that this methodology produces a ROE in the range of  
11 8.8% to 9.2% with a midpoint of 9.0%.

12 Finally, Mr. Gorman applies a CAPM analysis to the same peer group of  
13 companies used in his DCF analysis and obtains a ROE in a range of 7.00% to 8.54%.<sup>92</sup>  
14 He opts for the high end of the range, 8.5%, which his final CAPM estimate of the cost of  
15 equity.

16 The results from the various methodologies are summarized on Table 38 page  
17 VIII-37. Mr. Gorman estimates a ROE for SDG&E in the range of 8.5% to 9.65%.<sup>93</sup> He  
18 appears to select the upper end of his range as his final recommended ROE for SDG&E,  
19 based on his inclusion of his proposed "wildfire ROE premium."<sup>94</sup>

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<sup>92</sup> TURN Testimony (Gorman) at VIII-37.

<sup>93</sup> See TURN Testimony (Gorman) at II-5 (Table 4).

<sup>94</sup> As I discuss further below, Mr. Gorman's apparently proposed "premium" would actually only place SDG&E's ROE at the lower end of ROEs for vertically-integrated utilities of average risk.

1 **Q. WHAT ARE THE BASIC CONCLUSIONS OF YOUR REBUTTAL TESTIMONY**  
2 **TO MR. GORMAN'S COST OF EQUITY TESTIMONY?**

3 A. While I agree with several of Mr. Gorman's procedures and methodologies, Mr. Gorman  
4 understates SDG&E's cost of common equity by a minimum of 100 basis points (1.0%),  
5 which would bring his recommended ROE to at least 10.0%. If Mr. Gorman's various  
6 results are amended to reflect proper data inputs to the financial models and if appropriate  
7 risk adjustments are incorporated into his analysis, Mr. Gorman's revised ROE  
8 recommendation would be quite consistent with my own recommendation as I show  
9 below.

10 **Q. PLEASE SUMMARIZE YOUR COMMENTS ON MR. GORMAN'S**  
11 **TESTIMONY.**

12 A. I agree with: (i) Mr. Gorman's samples of utility companies in his DCF and CAPM  
13 analyses, with one minor exception; (ii) his use of analysts' growth forecasts as proxies  
14 for expected growth in the classic constant growth DCF model and first stage of the  
15 multi-stage DCF model; (iii) the beta estimates in the CAPM analysis; (iv) part of his  
16 MRP component of the CAPM analysis; and (v) the broad outline of his risk premium  
17 analyses. My disagreements center more on the appropriate data inputs to the various  
18 models and failure to properly recognize SDG&E's relative risks.

19 I disagree with Mr. Gorman on the following grounds: (i) the absence of a  
20 flotation cost adjustment; (ii) the use of the sustainable growth version of the DCF model,  
21 (iii) the risk-free rate proxy in the CAPM and Risk Premium analyses, (iv) one of the  
22 MRP components in the CAPM analysis; (v) the failure to employ the empirical version  
23 of the CAPM in keeping with the vast literature on the subject; and (vi) the failure to

1 account for the inverse behavior between the allowed risk premium and the level of  
2 interest rates. I also conclude that his criticisms of my testimony are unfounded.

3 I shall now treat each of those issues in turn.

4 **A. DCF Dividend Yield and Flotation Costs**

5 **Q. DO YOU HAVE ANY COMMENT CONCERNING MR. GORMAN'S DIVIDEND**  
6 **YIELD COMPONENT?**

7 A. Yes. The expected dividend yield component of the DCF model should be adjusted for  
8 underpricing allowance by dividing it by  $(1 - f)$ , where  $f$  is the underpricing allowance  
9 factor. As discussed earlier, Mr. Gorman's dividend yield component is understated by  
10 approximately 20 basis points because it does not allow for flotation costs, and, as a  
11 result, a legitimate stockholder expense is left unrecovered.

12 **Q. WHAT FLOTATION COST TREATMENT DID MR. GORMAN RECOMMEND**  
13 **IN THIS CASE?**

14 A. Mr. Gorman's common equity return recommendation does not include any allowance  
15 whatsoever for issuance expense. Therefore, his DCF estimates of equity costs are  
16 downward-biased by approximately 20 basis points by that omission alone. I refer to my  
17 earlier discussion of this issue in my rebuttal of Mr. Rothschild's testimony.

18 **B. Sustainable Growth**

19 **Q. PLEASE COMMENT ON MR. GORMAN'S SUSTAINABLE GROWTH**  
20 **ESTIMATE IN THE DCF MODEL.**

21 A. In order to estimate the growth component of the DCF model, Mr. Gorman also relies on  
22 the sustainable growth approach, where the growth rate is based on the equation  $g =$   
23  $b(\text{ROE})$ , with  $b$  as the percentage of earnings retained and ROE as the expected rate of  
24 return on book equity (ROE). Mr. Gorman also accounts for the impact of external stock

1 financing on growth by adding an external growth term ( $g = sv$ ). For reasons discussed  
2 earlier, which will not be repeated here, I disagree with the sustainable growth technique  
3 in view of its inherent circularity. In fairness to Mr. Gorman, he does not rely on this  
4 faulty methodology in order to arrive at his final return recommendation.

5 **C. CAPM Risk-Free Rate**

6 **Q. DOES MR. GORMAN PERFORM A CAPM ANALYSIS?**

7 A. Yes, he does.

8 **Q. WHAT INPUTS DOES MR. GORMAN USE IN THE CAPM ANALYSIS?**

9 A. Three inputs are required in order to implement the CAPM: the risk-free rate, the beta  
10 risk measure, and the market risk premium (MRP). For the risk-free rate, Mr. Gorman  
11 uses 2.80%.<sup>95</sup> For beta, Mr. Gorman uses 0.70, which is the average historical Value  
12 Line beta of his electric utilities group.<sup>96</sup> For the MRP, Mr. Gorman uses 7.0% which is  
13 the average of an historical estimate of 6.0% and a prospective estimate of 8.2%.

14 **Q. DO YOU AGREE WITH MR. GORMAN'S BETA ESTIMATE?**

15 A. Yes, I do.

16 **Q. DO YOU AGREE WITH MR. GORMAN'S MRP ESTIMATE?**

17 A. No, not entirely. I agree with the prospective estimate of 7.6% but disagree with the  
18 historical estimate of 6.0%.

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<sup>95</sup> TURN Testimony (Gorman) at VIII-37:9.

<sup>96</sup> *Id.* at VIII-34:17-18.



1 **Q. WHAT RISK-FREE RATE DOES MR. GORMAN ADOPT IN HIS CAPM AND**  
2 **RISK PREMIUM ANALYSES?**

3 A. Mr. Gorman uses *Blue Chip Financial Forecasts*' projected 30-year Treasury bond yield  
4 of 2.80% as his risk-free input in the CAPM and Risk Premium analyses.<sup>97</sup>

5 **Q. DR. MORIN, DO YOU AGREE WITH THIS RISK-FREE ESTIMATE?**

6 A. No, I do not, for it is too low. Mr. Gorman should have a forecast of 4.2% based on a  
7 consensus of several projections. I was surprised by Mr. Gorman's sole reliance on the  
8 Blue Chip forecasts. When it came to Gross Domestic Product ("GDP") forecasts to  
9 implement the multi-stage DCF model, Mr. Gorman relied on a wide variety of  
10 forecasts.<sup>98</sup> Strangely, he did not rely on the same sources for his forecasts of the risk-  
11 free rate.

12 As I discussed earlier in my rebuttal to Mr. Rothschild, all the economic forecasts  
13 of which I am aware, which are cited in Table 1 of this testimony, suggest a 4.2% interest  
14 rates on long-term Treasury bonds.<sup>99</sup> As a result, Mr. Gorman's CAPM and Risk  
15 Premium estimates are understated by 140 basis points (4.2% - 2.8% = 1.4%). That in  
16 itself would raise his recommended ROE by 1.4%, from either 9.0% to 10.4%, or 9.65%  
17 to 11.05%.

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<sup>97</sup> *Id.* at VIII-33:8-9.

<sup>98</sup> *Id.* at VIII-23 (Table 25).

<sup>99</sup> Ex. SDG&E-04 (Morin) at 32, Table 2.

1           **D.     CAPM: Market Risk Premium**

2           **Q.     DO YOU AGREE WITH MR. GORMAN’S ESTIMATE OF THE HISTORICAL**  
3           **MARKET RISK PREMIUM?**

4           A.     No, not entirely. While I agree with his prospective estimate of 8.2%, I disagree with the  
5           historical estimate of 6.0%. Mr. Gorman uses a historic risk premium of 6.0%, which he  
6           states is the difference between the 1926-2018 arithmetic average of the achieved total  
7           return on the S&P 500 (11.9%) and the total return on long-term Treasury bonds  
8           (5.9%).<sup>100</sup>

9                     The more accurate way to estimate the market risk premium from historic data is  
10           to use the **income** return, not **total** returns on government bonds, as explained in Duff &  
11           Phelps Valuation Yearbook, the source of Mr. Gorman’s data. The long-horizon (1926-  
12           2018) market risk premium (based on income returns, as required) is specifically  
13           calculated to be 6.9%, rather than 6.0%. Duff & Phelps recommends the use of the latter  
14           as a more reliable estimate of the historical market risk premium. I concur with this  
15           viewpoint because the income component of total bond return (i.e. the coupon rate) is a  
16           far better estimate of expected return than the total return (i.e. the coupon rate + capital  
17           gain), as realized capital gains/losses are largely unanticipated by bond investors.

18                     With this correction, Mr. Gorman’s MRP becomes 7.5%, the average between his  
19           prospective estimate of 8.2% and the corrected 6.9% historical average. This correction  
20           alone increases Mr. Gorman’s CAPM estimate 28 basis points (the difference between  
21           7.5% and 7.1% times a beta of 0.70), and would raise his recommended ROE from 9.0%

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<sup>100</sup> TURN Testimony (Gorman) at VIII-35:11-15.

1 to nearly 9.3%, or 9.65% to 9.995%, even without the risk-free rate understatement  
2 correction of 140 basis points.

3 **E. CAPM Understatement**

4 **Q. DOES MR. GORMAN'S VERSION OF THE CAPM UNDERESTIMATE THE**  
5 **APPROPRIATE COST OF CAPITAL?**

6 A. Yes, it does. As was discussed earlier in my rebuttal, a CAPM-based estimate of the cost  
7 of capital underestimates the return required from low-beta securities and overstates the  
8 return from high-beta securities, based on the empirical evidence. Mr. Gorman's version  
9 of the CAPM underestimates equity costs by about 50 basis points from this bias.

10 **F. Risk Premium Analysis**

11 **Q. DO YOU AGREE WITH MR. GORMAN'S HISTORICAL RISK PREMIUM**  
12 **ANALYSIS?**

13 A. No, I do not.

14 **Q. HOW DOES MR. GORMAN ESTIMATE THE HISTORICAL RISK PREMIUM**  
15 **ESTIMATES?**

16 A. Mr. Gorman estimated the difference between the allowed return on utility common  
17 equity investments and both U.S. Treasury and A-rated utility bond yields over the 1986-  
18 2019 period bonds to arrive at two risk premia. Mr. Gorman concludes that this  
19 methodology produces a ROE in the range of 8.8% to 9.2% with a midpoint of 9.0%.<sup>101</sup>

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<sup>101</sup> *Id.* at VIII:32:5-6.

1 **Q. WHAT IS WRONG WITH MR. GORMAN'S HISTORICAL RISK PREMIUM**  
2 **ESTIMATES?**

3 A. There are three things wrong. First, it is based on the wrong risk-free rate forecast.  
4 Second, the use of 5-year and 10-year rolling averages to his results arbitrary. In the case  
5 of his DCF results and CAPM results he opted for the high end of the range, but in this  
6 instance he only gives a 70% weight to the high-end results. Third, Mr. Gorman's  
7 analysis does not recognize the inverse relationship between the risk premium and  
8 interest rates, as I did in my direct testimony.

9 **Q. DID MR. GORMAN TAKE INTO ACCOUNT THE RELATIONSHIP BETWEEN**  
10 **RISK PREMIUMS AND INTEREST RATES?**

11 A. No, he did not. In his risk premium analysis, Mr. Gorman examines the historical risk  
12 premiums implied in the ROEs allowed by regulators over the period 1986-2019 but fails  
13 to take into account the rising trend of the risk premium in response to lower interest  
14 rates. That is evident from Mr. Gorman's own data. On Schedule MPG-10, the risk  
15 premium reported for 2019 is 6.7%, which is 110 basis points (1.10%) in excess of Mr.  
16 Gorman's average risk premium of 5.6% for the whole period.

17 A careful review of ROE decisions relative to interest rates reported in Mr.  
18 Gorman's Schedule MPG-10 reveals a narrowing of the risk premium in times of rising  
19 interest rates, and a widening of the premium as interest rates fall. As I demonstrated in  
20 my direct testimony, the following statistical relationship between the risk premium (RP)  
21 and Treasury bond yields (YIELD) emerges over the 1986-2019 period:

22 
$$RP = .0816 - 0.4668 \text{ YIELD} \quad R^2 = 0.84^{102}$$

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<sup>102</sup> Ex. SDG&E-04 (Morin) at 46.

1           The relationship is statistically significant as indicated by the high R2. Inserting  
2           the current long-term Treasury bond yield of 2.8% used by Mr. Gorman in the above  
3           equation suggests a risk premium estimate of 6.9% that would be allowed. This in turn  
4           implies an allowed ROE of 9.7% rather than Mr. Gorman's recommended 9.0%, a  
5           difference of 70 basis points. Inserting the 4.2% risk-free rate that Mr. Gorman should  
6           have used in his CAPM and Risk Premium analyses suggests a risk premium estimate of  
7           6.2%, which in turn implies a ROE of 10.4% or 11.15%, rather than Mr. Gorman's  
8           recommended 9.0% or 9.65%, a difference of 1400 basis points.

9           **Q. DID MR. GORMAN ADJUST HIS RECOMMENDED RETURN ON EQUITY**  
10           **UPWARD IN ORDER TO ACCOUNT FOR THE COMPANY'S HIGHER**  
11           **RELATIVE RISK?**

12           A. It is not entirely clear. It appears that Mr. Gorman's 9.65% proposal for SDG&E  
13           includes a .65% wildfire ROE premium.<sup>103</sup> It should be noted, however, that Mr.  
14           Gorman's proposal would only place SDG&E's ROE at the low end of the average ROE  
15           granted for vertically-integrated ROE utilities in 2018-2019. In other words, it does not  
16           actually account for the Company's higher relative risk. And, at times, Mr. Gorman  
17           seems to try to distance himself from this portion of his proposal.<sup>104</sup> Without this .65%  
18           proposal, Mr. Gorman's recommendation does not take into account SDG&E's higher  
19           risk and would place the Company's ROE well below the national average for ROEs set  
20           in 2018-2019.

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<sup>103</sup> See TURN Testimony (Gorman) at II-5:10-11 ("The high end of my recommended range for the electric utilities includes a more reasonable proposal for a wildfire ROE premium").

<sup>104</sup> See *id.* at V-10.

1           **G.     Response to Mr. Gorman's Comments**

2                   **1.     Peer Group**

3   **Q.    HOW DO YOU RESPOND TO MR. GORMAN' CRITICISM OF YOUR PEER**  
4   **GROUP ON THE GROUNDS THAT TWO COMPANIES, FORTIS AND**  
5   **DOMINION, SHOULD BE EXCLUDED FROM THE ANALYSIS?**

6   A.    I disagree. First, Fortis owns U.S. electric utilities and is covered in the Value Line data  
7         base and its utility coverage. Second, investors are certainly not precluded from  
8         investing in cross-border utility stocks such as Fortis, especially given its strong presence  
9         and exposure in the U.S. electric utility industry. Third, Mr. Gorman argues that the  
10        Canadian equity market is riskier than the U.S. market and, therefore, Fortis should be  
11        excluded. That logic escapes me. Just because the Canadian equity market is riskier than  
12        the U.S. because of its exposure to natural resources, it certainly does not follow that  
13        Fortis is also riskier. As a matter of fact, Fortis' beta risk measure is 0.65 which is nearly  
14        the same as the average electric utility beta, and thus equivalent in risk.

15           Mr. Gorman excludes Dominion on the grounds that it is acquiring SCANA. The  
16         transaction several months ago in February 2019, so there is no longer any reason for the  
17         exclusion.

18                   **2.     Flotation Cost**

19   **Q.    PLEASE COMMENT ON MR. GORMAN'S CRITICISM OF YOUR**  
20   **FLOTATION COST ADJUSTMENT.**

21   A.    Mr. Gorman's dividend yield component is understated by 20 basis points because it does  
22         not allow for flotation costs, and, as a result, a legitimate stockholder expense is left  
23         unrecovered.

1 Mr. Gorman's only argument against my flotation cost adjustment is that it is not  
2 based on SDG&E-specific costs, and that it is generic in nature.<sup>105</sup> That argument is  
3 specious. To base a flotation cost allowance on a one company sample, although  
4 company specific, would not provide a sufficiently reliable statistical and economic basis  
5 to infer a utility's appropriate flotation cost allowance. While it is conceptually correct to  
6 rely on the particular company circumstances in quantifying the flotation cost allowance,  
7 it is not a practical alternative. The flotation cost allowance is a weighted average cost  
8 factor designed to capture the average cost of various equity vintages and types of equity  
9 capital raised by the company.

### 10 3. DCF Growth Rates

11 **Q. PLEASE COMMENT ON MR. GORMAN'S CRITICISM OF YOUR DCF**  
12 **GROWTH RATES BECAUSE THEY EXCEED THE LONG-TERM GROWTH**  
13 **OF THE MACROECONOMY.**

14 A. Mr. Gorman criticizes my use of analysts' growth rates on the grounds that they exceed  
15 the long-term sustainable growth rate of the economy.<sup>106</sup> Mr. Gorman contends that  
16 projected growth in Gross Domestic Product (GDP) constitutes a high-end, sustainable  
17 growth rate for a utility over an indefinite period of time. However, Mr. Gorman's  
18 position is directly contradicted by his statement in favor of analysts' growth estimates:

19 As predictors of future returns, security analysts' growth estimates have  
20 been shown to be more accurate than growth rates derived from historical  
21 data. That is, assuming the market generally makes rational investment  
22 decisions, analysts' growth projections are more likely to influence

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<sup>105</sup> *Id.* at X-20:17-18.

<sup>106</sup> *Id.* at X-6:5-7.

1 investors' decisions which are captured in observable stock prices than  
2 growth rates derived only from historical data.<sup>107</sup>

3 Furthermore, Mr. Gorman has not provided any empirical evidence that earnings  
4 per share would grow at the average growth of the economy, or GDP growth, and I am  
5 unaware of any financial literature that would support such an assertion. To the best of  
6 my knowledge, there is no empirical support for the notion that the earnings and  
7 dividends of utility companies, in general, or electric utilities, in particular, or indeed any  
8 specific company or industry, track GDP growth. Nor am I aware of any evidence that  
9 the investment community looks to GDP growth over the next century when evaluating  
10 utility investments. However, based upon the previously cited wealth of empirical and  
11 academic literature which supports the superiority of analysts' forecasts as measures of  
12 investor expectations for the use of such forecasts in the DCF model, current earnings  
13 growth forecasts are the appropriate growth rates to use in a DCF analysis. As discussed  
14 earlier in my rebuttal and in my direct testimony, there is considerable empirical evidence  
15 in the academic literature that support the superiority of analysts' forecasts of earnings  
16 per share as measures of investor expectations. Besides, to the extent that economic  
17 trends influence growth, they are already captured in analysts' growth estimates for  
18 electric utilities.

19 Be that as it may, analyst growth rates are the growth rates impounded in stock  
20 prices, whether I or Mr. Gorman agree or disagree with the use of such growth rates.

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<sup>107</sup> *Id.* at VIII-16:1-5 (citation omitted).



1                   **4. Accuracy of Forecasts**

2   **Q. DR. MORIN, DO YOU AGREE WITH MR. GORMAN THAT THE ACCURACY**  
3   **OF INTEREST RATE FORECASTS IS PROBLEMATIC?**

4   A. No, I do not. Mr. Gorman suggests that little weight should be accorded to interest rate  
5   forecasts because they are often wrong, implying that they should not be used as proxies  
6   for the risk-free rate in implementing financial models.<sup>108</sup> Mr. Gorman does not offer any  
7   published academic supportive evidence for that statement. I refer to my earlier  
8   discussion on this issue when rebutting Mr. Rothschild. One wonders if Mr. Gorman  
9   feels the same way about analyst growth forecasts on which he relies upon extensively in  
10   his DCF analysis, which often turn out to be wrong.

11                   **5. Multi-Stage DCF Analysis and Gross Domestic Product Growth**

12   **Q. PLEASE COMMENT ON MR. GORMAN'S IMPLEMENTATION OF HIS**  
13   **MULTI-STAGE DCF ANALYSIS.**

14   A. Mr. Gorman' testimony contains a lengthy analysis of SDG&E's cost of equity using the  
15   multi-stage DCF model.<sup>109</sup> In the interest of time and space, I will only make brief  
16   comments on this analysis, since Mr. Gorman himself does not seem to have much faith  
17   in the results from this method. As shown on Table 6 page 37 and lines 3-5 of his  
18   testimony, Mr. Gorman's final DCF estimate is 8.6%, and his low multi-stage DCF  
19   results are ignored, perhaps an indication of the inappropriate nature of this method.

20                   The central assumption of this approach, and its Achilles' heel in my view, is that  
21   utility growth rates match that of the macroeconomy. I am not an enthusiastic proponent

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<sup>108</sup> *Id.* at X-19.

<sup>109</sup> *Id.* at VIII-19 – 25.

1 of this approach because I am not aware of any financial literature supporting the notion  
2 that that utility earnings per share would grow at the average growth of the economy, or  
3 match GDP growth. To the best of my knowledge, there is no empirical support for the  
4 notion that the earnings and dividends of utility companies, in general, or electric utilities,  
5 in particular, or indeed any specific company or industry, track GDP growth. Nor am I  
6 aware of any evidence that the investment community looks to GDP growth over the next  
7 several decades when evaluating utility investments.

8 However, based upon the wealth of empirical and academic literature that  
9 supports the superiority of analysts' forecasts as measures of investor expectations for the  
10 use of such forecasts in the DCF model, current earnings growth forecasts are the  
11 appropriate growth rates to use in a DCF analysis. As discussed in my direct testimony,  
12 there is considerable empirical evidence in the academic literature that support the  
13 superiority of analysts' forecasts of earnings per share as measures of investor  
14 expectations.<sup>110</sup> Besides, to the extent that economic trends influence growth, they are  
15 already captured in analysts' growth estimates for electric utilities.

16 In any event, Mr. Gorman himself does not appear to place much faith on his  
17 multi-stage DCF model, which is predicated on the idea that utilities grow at the same  
18 rate as the general macro-economy, for he places no weight at all on the results of his  
19 multi-stage DCF model.

20 **Q. DO YOU HAVE ANY MORE COMMENTS ON THE USE OF GDP GROWTH IN**  
21 **THE MULTI-STAGE DCF MODEL?**

22 A. Yes, I do. I have the following additional comments.

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<sup>110</sup> Ex. SDG&E-04 (Morin) at 20:11-13.

1 First, Mr. Gorman assumes a single generic growth rate of 4.1% for all the  
2 companies in his proxy group. Hence, if Mr. Gorman's view that all utility companies  
3 will grow at a long-term growth of 4.1%, there is really no need for a proxy group at  
4 all.<sup>111</sup>

5 Second, it is difficult to accept Mr. Gorman's notion that investors believe that  
6 every company will grow at the same rate of 4.1% forever. Mr. Gorman's 4.1% growth  
7 rate is generic nature, and does not account for the different risks and prospects of the  
8 peer group companies or for the entire utility industry for that matter.

9 Third, if we accept the current and prospective inflation rate of 2.0%, Mr.  
10 Gorman's nominal GDP growth rate of 4.1% becomes only about 2% in real inflation-  
11 adjusted terms. I find hard to believe that investors would assume the risk of common  
12 stocks in exchange for a mere 2.0% more than expected inflation. An investor would be  
13 better off buying bonds under that scenario.

14 Fourth, the DCF model assumes that changes in the growth rate are inversely  
15 related to the dividend yield. There are two moving interrelated parts in the DCF model:  
16 the growth rate; and the dividend yield (D/P). As the expected growth increases, the  
17 stock price increases and the dividend yield (D/P) decreases. The reverse is true as well.  
18 As growth decreases, the stock price decreases, that is, the dividend yield increases. If  
19 we believe that Mr. Gorman's 4.1% growth rate applies to SDG&E and to all the other  
20 peer companies in contrast to analyst growth rates in the 5% - 6% range embedded in  
21 current stock prices, it behooves us to accept that the dividend yield will increase from its  
22 base level of 3.0%. In short, Mr. Gorman's DCF analysis is incomplete because it

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<sup>111</sup> TURN Testimony (Gorman) at VIII-17:16.

1 erroneously assumes that one factor can change while all others remain constant. Mr.  
2 Gorman assumes that all the peer companies have a 4.1% growth rate and that none of  
3 those peer companies' dividend yield would change as their expected growth rates  
4 decline. If a 4.0% growth rate were to apply to utility companies, one must make  
5 assumptions as to their dividend yield, which Mr. Gorman fails to do.

6 **6. Interest Rate Forecast**

7 **Q. HOW DO YOU RESPOND TO MR. GORMAN'S CRITICISMS OF YOUR**  
8 **LONG-TERM INTEREST RATE FORECAST BECAUSE IT IS HIGHER THAN**  
9 **THE FORECAST PUBLISHED IN THE BLUE CHIP FINANCIAL FORECASTS?**

10 A. Mr. Gorman argues that a projected risk-free rate of 4.2 % exceeds the consensus forecast  
11 published in The Blue Chip Financial Forecasts.<sup>112</sup> I have two responses. First, the Blue  
12 Chip Financial Forecasts is not necessarily the consensus. It is but one forecast and is  
13 certainly not representative of the consensus, as I showed earlier in my rebuttal of Mr.  
14 Rothschild's testimony. Table 1 on page 26 contains the average forecast from six  
15 authoritative sources as 4.2%, and there is little variability among the forecasts. Clearly,  
16 the Blue Chip Financial Forecasts forecast of 2.8% is an outlier.

17 Second, the Blue Chip Financial Forecasts are for only the next five- and ten-year  
18 periods, whereas the interest rate forecasts shown on Table 1 above are based on much  
19 longer time periods. This is quite consistent with the DCF model long-term horizon  
20 requirements and with what investors can reasonably expect to occur over the very long-  
21 run horizon of the DCF model.

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<sup>112</sup> *Id.* at X-9:11-13.

1                   **7. Historical Risk Premium Analysis**

2 **Q. PLEASE COMMENT ON MR. GORMAN’S FIRST CRITICISM OF YOUR**  
3 **HISTORICAL RISK PREMIUM ANALYSIS.**

4 A. Mr. Gorman takes issue with my historical risk premium analysis because it is based on  
5 an overstated risk-free rate of 4.2% rather than his Blue Chip forecast of 2.8%.<sup>113</sup> I have  
6 already discussed the lack of representativity of Mr. Gorman’s 2.8% risk-free rate.

7                   Mr. Gorman’s second concern is unwarranted as well.<sup>114</sup> Over very long time  
8 periods such as used in my historical risk premium studies, the influence of unexpected  
9 capital losses offsets the influence of unexpected capital gains on both bond and stock  
10 returns.

11                   **8. Empirical CAPM**

12 **Q. DO YOU HAVE ANY COMMENTS REGARDING MR. GORMAN’S**  
13 **CONCERNS WITH YOUR EMPIRICAL CAPM ANALYSIS?**

14 A. Yes. Mr. Gorman’s concerns with my empirical CAPM analysis arise from his confusing  
15 the adjustment of beta with the empirical CAPM. As previously discussed in my direct  
16 testimony, there is considerable academic and regulatory support for the use of the  
17 empirical CAPM.<sup>115</sup> As explained in Appendix A of my direct testimony, it is essential  
18 to take into account the reality that the empirical Security Market Line described by the  
19 traditional CAPM is not as steeply sloped as the predicted Security Market Line. The  
20 empirical CAPM is thus a return adjustment which accounts for this reality and is not an

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<sup>113</sup> *Id.* at X-17:3-4.

<sup>114</sup> *Id.* at X-15:13-16.

<sup>115</sup> Ex. SDG&E-04 (Morin) at 40-43.

1 adjustment to beta which is an x-axis adjustment accounting for regression bias. Hence,  
2 the use of adjusted betas is not equivalent to the empirical CAPM. Mr. Gorman's  
3 criticisms are unfounded.

4 Mr. Gorman also erroneously argues that there is no evidence supporting the  
5 empirical CAPM that rely on Value Line adjusted betas. I provided a substantial  
6 bibliography of evidence supporting the empirical CAPM in Appendix A of my direct  
7 testimony.

#### 8 9. Risk Premium and Interest Rates

9 **Q. IS MR. GORMAN CORRECT THAT THE INVERSE RELATIONSHIP**  
10 **BETWEEN EQUITY RISK PREMIUMS AND INTEREST RATES IS NOT**  
11 **SUPPORTED BY ACADEMIC RESEARCH?**

12 A. No. Mr. Gorman erroneously argues that the inverse relationship between equity risk  
13 premiums and interest rates is not supported by academic research.<sup>116</sup> My first reaction  
14 was to simply point to the graph on page 57 of my direct testimony, which shows a very  
15 clear significant negative relationship.

16 Contrary to Mr. Gorman's contention that finance literature does not fully endorse  
17 the notion that the risk premium shrinks as interest rates decline, there is an abundance of  
18 studies that support the notion. Published studies demonstrate that, beginning in 1980,  
19 risk premiums varied inversely with the level of interest rates, rising when rates fell and  
20 declining when interest rates rose.<sup>117</sup>

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<sup>116</sup> TURN Testimony (Gorman) at X-17:11-13.

<sup>117</sup> See, e.g., Willard T. Carleton, *et al.*, "Inflation Risk and Regulatory Lag," 38 *The Journal of Finance* 419-43 (1983); Eugene F. Brigham, *et al.*, "The Risk Premium Approach to Measuring a Utility's Cost of Equity," 14 *Financial Management* 33-45 (1985); Robert S. Harris, "Using Analysts' Growth Forecasts to Estimate Shareholder Required Rates of Return," 15 *Financial Management* 58-67

1 Regulators have recognized this tendency as well. The California Public Utilities  
2 Commission recognizes that the cost of equity does not move in tandem with interest  
3 rates, and its long-standing practice has been to adjust the cost of equity by one-half to  
4 two-thirds of the change in bond yields.<sup>118</sup>

5 The reason for this relationship is that when interest rates rise, bondholders,  
6 whose interest rates are fixed, often suffered a decrease in the market value of their  
7 bonds, experiencing a capital loss. This is referred to as interest rate risk. Stockholders,  
8 on the other hand, are more concerned with the firm's earning power.

9 In order to avoid interest rate risk in an environment of rising interest rates,  
10 investors tend to become more willing to undertake equity investments which, although  
11 subject to some fear of loss of earning power, are less sensitive to the fear of interest rate  
12 risk. The resulting increase in the supply of funds available for such equity investments  
13 causes a downward pressure on the market price for equity.

14 So, generally it is observed that if bondholders' fear of interest rate risk exceeds  
15 shareholders' fear of loss of earning power, the risk differential will narrow and hence the  
16 risk premium will shrink. This is particularly true in high inflation environments. Interest  
17 rates rise as a result of accelerating inflation, and the interest rate risk of bonds intensifies  
18 more than the earnings risk of common stocks, which are partially hedged from the  
19 ravages of inflation. This phenomenon has been termed as a "lock in" premium.

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(1986); Robert S. Harris & Felicia C. Marston, "Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts," 21 *Financial Management* 63-70 (1992); and Farris M. Maddox, et al., "An Empirical Study of Ex Ante Risk Premiums for the Electric Utility Industry," 24 *Financial Management* 89-95 (1995).

<sup>118</sup> See D.99-06-057 ("the Commission has had a practice of only adjusting rate of return by one half to two thirds of the change in the benchmark interest rate") (citing D.94-11-076).

1           Conversely, in low interest rate environments, as is the case currently, when bondholders'  
2           interest rate fears subside and shareholders' loss of earning power dominate, the risk  
3           differential will widen and hence the risk premium will increase.

4           These empirical studies show that equity risk premiums have consistently  
5           increased as interest rates have declined. This result is a simple reflection of the fact that  
6           required rates of return in the stock market are not entirely dependent on changes in  
7           interest rates. Because utilities have to compete with other companies and with other  
8           types of equity investments for money, the return on equity for utilities does not change  
9           by as much as the observed changes in interest rates. The use of an unadjusted simple  
10          average of long-term equity risk premiums with current interest rates would be simply  
11          wrong. Such an approach would consistently understate the required return on equity.

12          In short, the empirical evidence from the published academic literature  
13          demonstrates that the risk premium varies inversely with the level of interest rates,  
14          contrary to Mr. Gorman's view. The relationship remains true today, as evidenced by the  
15          graph provided on page 47 of my direct testimony.

16      **Q.   WHAT DO YOU CONCLUDE FROM MR. GORMAN'S COST OF EQUITY**  
17      **ANALYSES?**

18      A.   I agree with several of Mr. Gorman's views and procedures: (i) his sample of electric  
19      utility companies in his DCF and CAPM analyses with one minor modification; (ii) his  
20      use of analysts' growth forecasts as proxies for expected growth in the classic DCF  
21      model; (iii) his beta estimates in the CAPM analysis; (iv) part of his market risk premium  
22      component of the CAPM analysis; and (v) the broad outline of his risk premium analysis,  
23      although not the input data.



1 I disagree with Mr. Gorman on the following grounds: (i) the absence of a  
2 flotation cost adjustment; (ii) an understatement of the risk-free rate in the CAPM and  
3 Risk Premium analyses; (iii) part of his MRP component in the CAPM analysis; (iv) the  
4 failure to employ the empirical version of the CAPM in keeping with the vast literature  
5 on the subject; (v) the failure to account for the inverse behavior between the allowed risk  
6 premium and the level of interest rates; and (vi) the failure to fully recognize SDG&E's  
7 higher business risk on account of the remaining wildfire liability risks and the  
8 continuing presence of inverse condemnation. I also conclude that his criticisms of my  
9 testimony are unfounded. My specific conclusions are as follows:

10 **1. DCF Dividend Yield and Flotation Costs.** Mr. Gorman's return estimates are  
11 understated by 20 basis points because he does not allow for flotation costs, and, as a  
12 result, a legitimate stockholder expense is left unrecovered.

13 **2. CAPM and Risk Premium Risk-Free Rate.** Mr. Gorman's risk-free rate is  
14 understated by 1.4%. Using the appropriate risk-free rate, Mr. Gorman's CAPM and  
15 Risk Premium estimates are to be raised by 140 basis points from this correction alone.

16 **3. CAPM MRP.** One of Mr. Gorman's MRPs is understated. Using the appropriate  
17 MRP, Mr. Gorman's CAPM estimates are understated by to be raised by 47 basis points  
18 from this correction alone.

19 **4. CAPM Version.** The raw form of the CAPM used by Mr. Gorman understates the  
20 cost of equity for low-beta securities by approximately 50 basis points.

21 **5. Allowed Risk Premium Analysis.** Mr. Gorman's allowed risk premium analysis  
22 does not account for the inverse relationship between allowed returns and the level of  
23 interest rates, understating returns by 70 basis points.

Table 7 below recapitulates my findings with respect to Mr. Gorman's testimony. Column 1 shows the three methodologies employed. Column 2 shows Mr. Gorman's original findings and the midpoints. Column 3 shows the 20 basis points understatement due to the flotation cost adjustment. Column 4 shows the 140 basis points correction for the understated risk-free rate in the CAPM and Risk Premium analyses. Column 5 displays the 28 basis points understatement in the CAPM's MRP component. Column 6 shows the 50 basis points understatement of the plain vanilla CAPM. Column 7 shows the amended Risk Premium results due to the unaccounted inverse relationship between risk premiums and interest rates. The last column sums the various understatements. As seen at the bottom of the table, the sum total of these corrections and revisions is that Mr. Gorman's ROE recommendation becomes 10.33% without any allowance for an SDG&E risk premium.

**Table 7. Summary of Mr. Gorman's Understatements**

Financial Model	Gorman Original	Flotation Cost	Risk-free Rate	CAPM MRP	ECAPM Bias	Inverse Relation	Final Estimates
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
DCF	8.60	0.20	0.00	0.00	0.00	0.00	8.80
CAPM	8.50	0.20	1.40	0.28	0.50	0.00	10.88
Risk Premium	9.00	0.20	1.40	0.00	0.00	0.70	11.30
<b>Average</b>							<b>10.33</b>

When one appropriately accounts for SDG&E's higher than average risks, even using Mr. Gorman's understated 0.65% risk premium, his recommendation becomes 10.98%, which is largely consistent with my proposal.

**Q. DR. MORIN, DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?**

A. Yes, it does.